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AGRICULTURE IN OXFORDSHIRE

AGRICULTURE IN OXFORDSHIRE

A SURVEY

MADE ON BEHALF OF THE INSTITUTE FOR RESEARCH IN
AGRICULTURAL ECONOMICS, UNIVERSITY OF OXFORD

BY

JOHN ORR

WITH A CHAPTER ON SOILS BY

C. G. T. MORISON

UNIV. OF
CALIFORNIA

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INTRODUCTION

In Travelling thro' ENGLAND, *a Luxuriance of Objects presents it self to our View:—Where-ever we come, and which way soever we look, we see something New, something Significant, something well worth the Travellers stay, and the Writer's care; Nor is any check to our Design, or Obstruction to its Acceptance in the World, to say the like has been done already, or to Panegyrick upon the Labours & Value of those Authors who have gone before, in this Work: A compleat Account of* GREAT BRITAIN *will be the Work of many Years, I might say Ages, and may employ many Hands: Whoever has travell'd* GREAT BRITAIN *before us, and whatever they have written, tho' they may have had a Harvest, yet they have always, either by Necessity, Ignorance, or Negligence pass'd over so much, that others may come and Glean after them by large Handfuls.*—DANIEL DEFOE, 1724.

THE scheme for an economic survey of agriculture in Oxfordshire owed its inception to Professor W. G. S. Adams, a member of the Advisory Committee of the Institute. It was felt that an investigation into the present condition of the agricultural industry would be of the utmost assistance to the Institute in deciding how best to approach the problems with which it had been established to deal, if, indeed, it were not an absolutely essential preliminary to such work. At the same time the publication of the information collected, and the discussion of the problems encountered, would be of assistance and value to the agricultural community and also to that large section of the general public to whom the land is a subject of unfailing interest.

The Committee decided to make a beginning with Oxfordshire, for obvious reasons, and the limits of the administrative county were adopted as a basis, with some hesitation, rather than a more scientific unit, upon the grounds that it would be more readily comprehended, and on the assumption that economic factors, such as markets, transport facilities, &c., exercise a more determining influence on the progress of agricultural development than do geological or soil factors. Inside the county boundary the area under survey has been treated in sections which follow as nearly as possible the more obvious natural divisions. From the experience gained in this way it seems probable that, in any extension of the work, neither administrative nor scientific divisions can be regarded as more suitable, and that the ideal units will be the 'farming districts', for these can be defined with greater or less certainty all over the country, and though they take no account of administrative limitations they are free from the drawback which would attach to a purely geological basis if the surveys are to be of practical value to the agricultural and general public. In the present volume the Chiltern district, extending north and south into Buckinghamshire and Berkshire, and the Cotswold area, spreading into several counties, are examples of the disadvantage of the administrative or county basis.

The method followed in the survey of Oxfordshire has been to visit as many as possible of the landowners, agents, and farmers in each district, and by this means the various styles of farming have been located; the crops and stock have been noted, account has been taken of the development of special branches of agriculture, dairying, potato growing, fruit growing, and market gardening, &c. Transport and marketing facilities, labour problems and the housing question, agricultural organization and education, the relative responsibilities of landlord and tenant, and farmer and labourer, intensive farming and areas of low development—all these and many other questions have been gone into with each section of the agricultural community and frank discussion has been encouraged. The facts elucidated and the impressions gained have been recorded, and, without any intention of bestowing praise or blame, an attempt has been made, by a consideration of the difficulties and problems which presented themselves, to arrive at some practical conclusions.

In view of the public interest in the small-holding movement, a special survey has been made of the allotments and small holdings of the county, treating this branch of the subject in greater detail than would have been warranted in other circumstances, and the results are being issued as a separate report.[1]

Except for the section dealing with the soils of the county, this volume is the work of Mr. John Orr, research assistant in the Institute. The chapter on soils has been contributed by Mr. C. G. T. Morison, University lecturer in Agricultural Chemistry, who has carried out a survey of the soils of Oxfordshire and the adjacent country. The results of his researches have not yet been published, owing to difficulties arising out of the present state of war, but they are available at the School of Rural Economy, in Oxford, to farmers and others.

C. S. ORWIN,
Director.

INSTITUTE FOR RESEARCH IN AGRICULTURAL ECONOMICS,
OXFORD, *September,* 1916.

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[1] *Allotments and Small Holdings in Oxfordshire.* Arthur W. Ashby. In the press.

AUTHOR'S NOTE

This survey, having been made during the spring and summer of 1914, does not reflect any of the abnormal conditions which have arisen in the agricultural world during the last two years. Certain increases in wages which took place early in 1915 have been mentioned, but, owing to the heavy enlistment of men in the fighting services, the consequent shortage of labour and further advances in wages, the figures are no longer representative.

In such a survey the ideal attainment would be to visit in each part of the county a sufficient number of typical estates and farms to gain a correct impression of the conditions under which agriculture as a whole is carried on, and, having done this, to reproduce the impression faithfully in writing. The claim is not made that conditions are fully represented here as they were seen, or as they were presented by landlords, farmers, and others. Questions connected with the unrest among the different agricultural classes which in a sense obtruded themselves have not been raised. But however much has been omitted, there is no statement in the following pages which has not been discussed with landlords, agents, farmers or labourers, and no conclusion or theory which has not been suggested by some of their experiences.

For providing the greater part of the material from which the survey has been made, thanks are due to the hundreds of farmers, who accompanied the information they gave with extreme hospitality and kindness, and also to the smaller number but great proportion of landlords and agents, and to the labourers who were met casually and whose names are unknown. It was a privilege to meet so many men to whom this work was a subject of interest, and it is hoped that the discussion of these problems affecting their business and welfare will bear even the slightest fruit in the future. For reading the whole or part of the manuscript, and for making suggestions and criticisms, thanks are due to Sir Sydney Olivier, K.C.M.G., Mr. L. L. Price, Treasurer of Oriel College (who kindly supplied some unique and valuable information with regard to the rents of Oriel College Estates), Professor Somerville, Mr. David Watson and Miss Watson, Mr. Robert Hobbs, jun., and Mr. G. R. Bland. Sir R. H. Rew, K.C.B., kindly provided the agricultural statistics for parishes or groups of parishes in Oxfordshire, and on the basis of these Mr. G. R. Bland made the maps showing the distribution of crops and live stock in the county. It is desired also to acknowledge the kind permission of His Majesty's Stationery Office to reproduce passages and figures from the *Agricultural Statistics*.

For their kindness in supplying photographs which appear in this volume I am indebted to Messrs. R. W. Hobbs & Sons, Henry W. Taunt & Co., and Mr. Henry Minn.

JOHN ORR.

OXFORD,
September, 1916.

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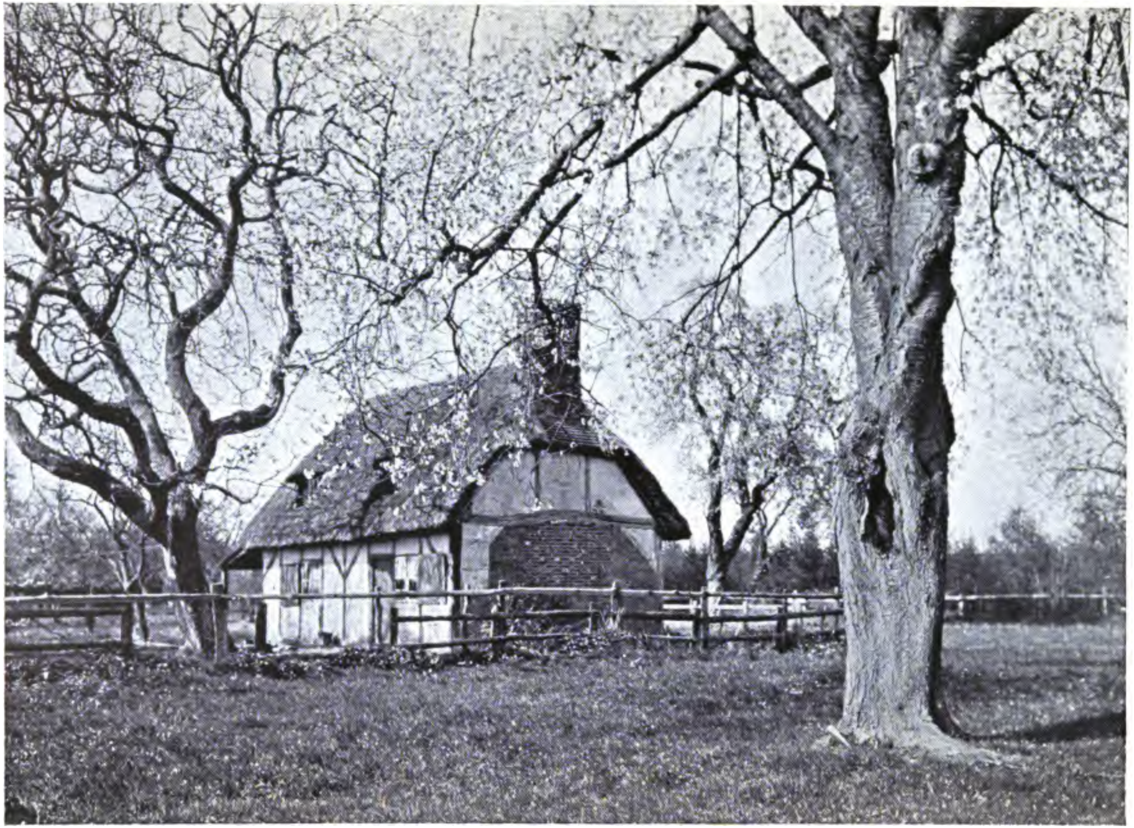
CHILTERNS FROM NORTH-EAST OF LEWKNOR



A CHILTERN COTTAGE

CALIFORNIA

CHAPTER I

THE CHILTERNS

Most people not born in Oxfordshire make their first acquaintance with the county at its southern end, and it may be well to follow the slight precedent which this fact affords and begin a survey of agriculture here. Caversham heights are familiar to those who have passed through Reading. Rising just across the Thames, they attract attention as much by their fine woods as by their elevation. This most southerly point of the county is about twenty-six miles from Oxford by road, while the distance from the City to the northern limit is thirty-one. As the crow flies the latter point is forty-eight miles from Caversham. Between the Three Shire Stone in the north and Oxford the breadth of the county varies from a narrow, conical apex to thirty-three miles, and between the City and the south the variation is only from seven to thirteen miles.

Farmers on tour, looking at Caversham, might conclude that it would be a desirable place in which to live rather than one in which to make a living from agriculture, and perhaps many of the men whose lot it is to cultivate the slopes behind the attractive bluffs would agree with them. The Thames, setting its course direct for Henley at Benson, has turned south, then east and north, to get to its destination, and in this sweep it leaves in Oxfordshire a large area of the chalk range known at this part as the Chiltern Hills. As it makes its way through this picturesque country, the river offers some of the finest reaches for boating to be found in its whole course. Between it and the hills level meadows form a strip of varying width, and from Goring to Henley, a distance of about twenty miles, the rising ground on the Oxfordshire side affords sites for residences that are more appreciated every year. At intervals along this stretch considerable portions have been appropriated for building. Caversham, the most populous centre, is a suburb of Reading, forming part of this prosperous borough, although it is on the opposite side of the river. Other places, such as Henley and Shiplake, continue to extend, and it seems as if there might soon be an unbroken fringe of villas along the lower slopes. This extension of residential areas deprives the farmers of good land, but provides them with a convenient market, an exchange the reasonableness of which they are inclined to recognize.

The Chiltern Hills, with the chalk formation of which they consist, occupy the south-east corner of Oxfordshire, embracing about 65,000 acres out of a total of 476,669 in the county. Running north-east from Goring they pass into Buckinghamshire above Chinnor, where they turn still more to the east and form the southern boundary of the Vale of Aylesbury. On the north-west side, facing Oxford, they rise for the most part sharply from the level, and similarly between Goring and Caversham they go up steeply from the river or meadows. On their south-east side between Caversham and Henley their ascent is more gradual. By all its physical features, therefore, this portion of the county is marked off with considerable definiteness from the rest. Its shape might be represented by a low table with one leg somewhat shortened, the whole being thus given a slight tilt in that direction. If the short leg is taken at Dunsden, or Sonning, in the extreme south-east, and the tipped-up end at Swyncombe, facing Oxford, or even farther north, an idea of the 'lie' of the country may be obtained. Above Chinnor the tipped-up end is 830 feet high, and the whole area corresponding to the surface of the table appears, when viewed from a distance, to be a comparatively smooth, well-wooded slope, although a good many undulations and unwooded spaces are discovered when it is traversed.

Nothing can be finer of its kind than this range of hills as seen from Shotover, or the hill north of Garsington, near

Oxford. Drawn like a bar with fine and regular lines across the south-eastern horizon, it is a perfect setting and completion of the intervening landscape. The break in the hills through which the Thames flows, and which divides them from their continuation in Berkshire, is hardly visible. As one follows their outline from south to north they produce an agreeable impression, increasing in height and assuming a deeper blue where the woods trail their skirts lower over the face of the chalk escarpment. Landmarks, dim in the south, stand out more clearly, until the range turns and rolls away in gentle waves into Buckinghamshire.

There are practically no streams in all this part. Bix Bottom and its continuation, a narrow valley without a river, runs for six miles north-west from Henley into the hills. In depressions with steeper sides, where one might expect to find water, there is none. The porous chalk subsoil drains the surface layers, which consists of deposits of clay and flints and of gravel. These are of varying depths. Flints are plentiful in many parts, and when some farmers have finished with other branches of their industry, they gather those from their fields and sell them to county or borough authorities for the repair of roads. Some people reprobate the practice on the ground that it causes injury to land, but opinion is divided on this point, and since it is a profitable business, farmers who possess the flints choose to take the risk with the profits. The upper parts of the hills are largely covered with beech woods, which supply the material for the partial manufacture of chairs at Chinnor, and for the complete articles at Stokenchurch and High Wycombe, as well as for the making of brush backs at a little factory employing about eighty men at Lower Assenden near Henley. In some places cherry orchards make a handsome show with their blossom in May and June.

The two main roads from London to Oxford, the one through Henley and the other through High Wycombe, cross the Chilterns. The country between these roads has changed little in any respect during the last half-century.

To the south of the Henley road new houses are being erected in or near the villages, offshoots, as it were, from the closer settlement that is taking place along the river. This thinly scattered invasion of the district by an element not connected with, or dependent on, agriculture extends as far as Huntercombe Golf Club to the west of Nettlebed, and gives a slight stimulus to a life that would otherwise be somewhat sluggish. In the tract between Stonor and Kingston Blount the farms and cottages are often placed among woods which cut them off in many ways from the world outside. In wet weather they appear dismal and moss-grown, but fortunately, in spite of this, the inhabitants become attached to conditions which to many outsiders must seem backward. The whole of the Chilterns is divided into a comparatively large number of estates on which there are fine houses and parks, several of these being stocked with deer. There are some pheasant covers which seem to be appropriate here, if game is to have a habitation in any part of the county.

Those are the general features of the district. With the exception of a few farms between Caversham and Henley none of the land would make an immediate appeal to farmers. There is little doubt that Lot would have left the Chilterns to his uncle Abraham, and would have chosen to settle on one of the plains to the north, west, or south. In spite of an unpromising aspect, however, agriculture here is not altogether an undesirable or unprofitable calling, nor is its history without interest. Less than thirty years ago what are called the 'uphill' farms, that is, those away from the river, were devoted to growing corn and roots, on the latter of which sheep and bullocks were fed.

It was about 1886 that the growing demand for milk in Reading, partly from the biscuit factory and partly from the general public, forced the question whether the milk-producing area could not be extended in this direction, and an experiment was made with an uphill farm of 220 acres. The holding had been cropped for corn and roots, and there was a flock of 200 ewes. The new farmer who had relieved his predecessor in a lease, the terms of which the latter had found onerous, sold 100 ewes and substituted 25 cows. Neighbours accustomed to the old system expressed misgivings. Not discouraged, however, the farmer continued his policy, and drew £600 for his milk in the first year, which certainly indicates an increase in production and presumably in profits. Since that time he has applied the policy to other two farms farther north, while the new system has extended gradually and generally.

More striking than the changes in cultivation and live stock have been the movements among the farmers. If a somewhat narrow tradition can be relied on, wave after wave of migration has swept over this district. In earlier periods farmers are said to have come from Wiltshire, and then from Somerset. They have come from Devonshire recently in greatest numbers, while some have moved across the river from Berkshire. These have taken the leading part in developing the milk business. About thirty-eight years ago farmers began to come from Devonshire, and certain land agents, recognizing their aptitude for introducing and working the new system, have continued to go to that county for tenants as often as farms have been vacant. There is no part of Oxfordshire from which so many of the old farming families have disappeared. In 1850 a directory gave the names of 130 farmers who occupied holdings between Caversham and Goring in the south-west and Stokenchurch to the north-east. To-day there seem to be not more than six or seven farms occupied by representatives of the farmers who were there at that time, and all except two families appear to have removed from their ancestral farms. No reports exist to tell how previous changes in the systems of farming worked themselves out. There was doubtless a time when the beech woods and open spaces were under control of the swineherd, and also a transition period at the end of which he had given place to the shepherd and the ploughman, just as the shepherd has now in so many cases made room for the cowman. Corn and sheep were the principal products on which farmers depended up to 1879.

In that year so many of their sheep died of the 'rot', and so much of their corn was wasted, that neither capital nor income was left to some, and little capital and no income to others. The number of sheep kept had been reduced even before this, there being 36,500 fewer in Oxfordshire in 1879 than in 1876, while between 1879 and 1881 there was a further reduction of 68,500, making a total of 105,000 in five years. The gradually increasing depression completed the change, as farmers had to vacate their holdings owing to financial exhaustion. As an old observer, who lived high up on the hills, watched the constant procession of farmers through the farms, he concluded that 'there is no business in which men can lose money so easily as in farming'.

The standard of cultivation steadily fell, and as the process went on landlords took farms in hand and incurred losses out of proportion to any advantage which accrued to agriculture. The policy was to spend as little as possible on equipment and in farming, but thrifty farming is a difficult thing for landlords to practise. A good many years before agricultural prices began to recover, the market for milk had come to raise and steady the fortunes of the men who were prepared to serve it. Dairy farmers had been rehabilitating agriculture by means of milk production before any improvement in the position of corn-growers had made itself felt. While landlords with farms in hand, and others who adhered to the old style, were working for a low and falling market, the men who occupy the largest holdings to-day were developing what proved to be the soundest part of the industry. By working as hard as they had done in their native county most of the Devonshire farmers were successful and were able to farm well. Under the depression Oxfordshire and Berkshire farmers had also acquired the habit of taking part in the manual work as well as supervising, and those who adopted these methods became comparatively prosperous. Landlords were growing tired of losing money, and were ready to let their farms at lower rents, while enterprising men had brought themselves to a position, both in respect of capital and of capacity for management, which enabled them to take over one or more farms in addition to their first. This exchange went on largely, so that now many farmers each occupy several holdings.

Owing to the character of the soil the Chilterns is a district where perhaps small holdings will not extend greatly until the markets are even more accessible. About Checkendon, Woodcote, and other villages there are several, both on the clay and on the gravel, but the disposal of their produce is difficult. There are also small farms from 100 to 200 acres that are too far from Reading to make them suitable for milk production, and are therefore under corn and sheep. Their tenants have had a precarious experience in recent years, and some have had to give up. If men entering farms had not sufficient capital to forgo profits for a time, seasons and prices have not been favourable enough to carry them through. When such cases are discussed, significant remarks are made about the quick and certain returns from milk, compared with those from corn, sheep, and bullocks. In certain parts of the county, farmers have a habit of judging a neighbour's financial position by the number of sheep he keeps, and take it to be a sign of weakness if he dispenses with his flock. No matter how many cattle a farmer in the Chilterns may have, it is still considered that the proper way of managing the soils on the chalk is to manure and consolidate them by folding sheep. Owing to a few dry seasons, perhaps a sharp fall in prices once or twice, and shortage of green food, this practice has become less common in recent years, for between 1909 and 1913 the number of sheep in Oxfordshire was again reduced from 234,594 to 185,067, and a due share of the reduction took place in the Chilterns.

Above Goring and Caversham the soil is rather shallow—not many inches of loam and gravel resting on the chalk, and if the spring and summer are dry, the too thin layer of soil on the top, between the dry atmosphere and the thirsty subsoil, is incapable of holding sufficient moisture to meet the needs of the crop. A chalk country, unlike meadows on the clay or strong land, does not produce grass in abundance.

Where the land has never been cultivated, the short, sweet sheep's fescue affords good grazing, but land that has been ploughed and allowed to fall down produces crested dogstail and other inferior grasses.

If a line is drawn from Mapledurham overlooking the Thames back through the hills to the north-west of Stonor, most of the farms to the east of this line are in part used for the production of milk, and those that are not, either to the east or west of the line on the top of the range, are largely used for rearing heifers, a business which, at the moment, is said to be more profitable than the sale of milk. Thus the demand for milk has brought about a change in the style of farming throughout the whole of the Chilterns. There has been a steady if not wide extension of the area under grass, and an improvement in the cultivation of crops in the rotation. Sheep have been dispensed with in many cases, but most of the green crops on which they used to be folded are still grown and fed to the cows. Thus even on farms in the higher parts there is a succession of winter rye, sainfoin, vetches, cabbages, swedes, and mangolds.

The class of farmers responsible for the cultivation of the greatest part of this district are probably those who each occupy from two to four separate holdings. It may be admitted at once that this policy of allowing a large area of land to get into few hands presents one undesirable feature in cases where a comparatively good farm-house is furnished and occupied only to the extent of a few rooms by a carter or shepherd, where the buildings are more dilapidated than usual, the yards more overgrown or dirty, and where the whole place suffers from the absence of the life and activity which makes a farm managed on the spot more attractive. This defect could be made good, if steps were always taken to apply the active management on the central holding to those more remote through capable managers stationed on them. When holdings are separated by considerable intervals from each other, and when those that are outlying are used only as auxiliaries to main farms, the management does not seem calculated to make the most of them, although main farms and auxiliaries must all be taken together if a judgement on this point is to be formed. Farmers who keep a herd of cows at Sonning or Shiplake may have a farm at Nettlebed on which heifers are reared to replenish the herd. It is, perhaps, best to regard the present as a transition period in agriculture here, and to recognize that the policy has been justified by circumstances. In walking over the farm on which a tenant of several holdings lives, a visitor would easily find himself asking how the style of management applied to it could be extended to adjacent land under inferior cultivation, and he would find it difficult to answer the question in any other way than landlords and agents have answered it—by giving the badly farmed land to the man who has proved himself a capable manager. This arrangement need not be permanent in every case, for men who have the ability and capital to farm 300 acres well do not always put a proportionately greater amount of energy into the management of 1200 acres, nor possess the additional capital necessary to work the larger area.

There are landlords who still keep several farms in hand, some of them because they believe this is more profitable for themselves than letting, and others because they wish to experiment in farming. The results are not generally regarded as satisfactory. In one or two cases the cultivation is so bad as to incur the general censure of farmers, and in others it has been so much overdone that it has been highly unprofitable, and steps are being taken to let some of the farms. There are instances where the management keeps close to normal farming methods with greater satisfaction to every one. So far as the agriculture of the district is concerned, therefore, some of the worst farming goes on under this system, and some of the most expensive but least sound economically, and, unfortunately for the look of the country as well as other reasons, the system under which the fields are neglected is likely to be more permanent since it is regarded as more profitable. In this connexion reference may be made to the pasture in the parks stocked with deer and rabbits.

This is capable of improvement, and requires it in order that it may not appear so inferior to the pasture on farms in its neighbourhood. Treatment with basic slag or chalk would repay itself.

Many farmers in the Chilterns have an impression that they are badly served by their soil. They work hard and spend largely in manures, and expect to see greater crops and to find themselves in a better financial position. These reasonable hopes seem to them not to be fulfilled, and in seeking an explanation they turn to the soil which, they say, devours everything put into it, nothing remaining in the surface layer. Manure which is not utilized during the season of its application is washed out, none of it passing over to the next crop. The condition of the farms does not bear out this theory, and the farmers' achievements are better in every respect than would be considered possible from their own estimate of their opportunities. The variations between efficiently and inefficiently managed farms are as clearly marked here as in any part of the country, the differences showing on the gravel soils of no great depth as well as on the clay and flints, and in permanent grass as much as in corn, seeds, or roots, and at Stonor as much as at Mapledurham. If there are disadvantages in being close to the chalk, there are also advantages where there is even a thin layer of gravel or clay on which to work. According to the testimony of large and successful farmers, chalking had paid itself over and over again. Fields that had been treated twenty-five and thirty years ago are more easily worked, and give heavier crops to-day because of that treatment. The chalked soil shows darker when ploughed, is more free and loose, and when chalk is applied its effects are seen in rye-grass, sainfoin, and corn literally 'to an inch'. The yield of hay crops on land that has not been dressed is about half a ton per acre, consisting largely of sorrel; the yield on dressed land is two tons of clean quality. It was also found that the deep, stiff clay about Swyncombe drained more readily after being treated.

What seemed to be a remarkable measure had been adopted in applying the chalk. Different farmers said they put on twenty, thirty-two, and fifty loads to the acre. The cost of applying the last amount was said to be between £6 and £7 per acre. The idea is that this will serve for thirty or even forty years. One farmer who entered his holding exactly thirty years ago has chalked part of it every year, and is now going over his fields a second time.

The style of farming throughout the Chilterns is based on a mixture of arable and of permanent grass, the former covering more than half of the area, although the proportions are gradually changing in favour of the latter. The common rotation is wheat, roots, barley or oats, and seeds. Under normal conditions all these crops grow well, dry seasons, perhaps, inducing conditions least favourable to them, since crops on the gravel are apt to burn. On the clay about Dunsden, Nettlebed, and Swyncombe heavy yields of wheat are got. It was said that on English Farm near Nettlebed six quarters were grown to the acre in 1913, and this is the same farm which Arthur Young mentions in 1807 as having grown exactly the same amount after two consecutive years of fallow. A few potatoes are grown about Nettlebed, but they do not constitute one of the crops in the district.

With the exception of corn, most of the crops are grown to produce milk. Shorthorns are almost the only breed kept for this purpose. Holsteins have been tried in a few places, but for some reason did not commend themselves and have been displaced. The number of cows kept varies from seven or eight on small farms to fifty on the largest, although only a few herds consist of more than thirty. There are no pedigree herds, but one or two of the best approach this standard and are under the careful management of enthusiastic owners. While a general transformation has taken place under the demand for milk, some farmers have adhered to what may be regarded as a very sound form of the old system, and have been successful. Thus on one farm of 530 acres there is a flock of pedigree Hampshire Downs with 400 breeding ewes and ewe tegs, and 200 wethers; 40 calves are weaned every year, and are sold as heifers and bullocks when they are between eighteen months and two years old; and a herd of pedigree Berkshire pigs is kept. Some active cultivation goes on to supply keep for this stock, and in addition some fields of roots are taken outside on which to fold tegs and wethers. The farmer, having been brought up in Berkshire and Oxfordshire, kept to this style of farming in which he was trained, and there is no reason why it should not be followed successfully on farms which are so far distant from Henley and Reading that the cost of carrying the milk to either place makes the business unprofitable. With a sufficiently mixed system of farming, and with the different lines actively worked, as they are here, there is a minimum of risk.

Progress has not been general, intervals occurring where farms bear the marks of inferior management. New tenants or new methods have not arrived everywhere, and places which at one time were remarkable for their cultivation now attract attention by their deterioration. In his report on Oxfordshire farming, written about 1853,[1] Mr. Clare Sewell Read mentions a farm at Assenden where sheep were folded on luxuriant sainfoin, a farm which might serve as a model of its kind. This part of the county is disappointing to-day, especially at the Bix end of the valley, which is the most favourably situated. Here the inefficiently farmed holdings are in the majority, the good lying beside the bad and condemning it. Houses and buildings are unsatisfactory in several cases, and this seems to have an influence on the management of the land. It is regrettable in some instances to find men who have proved capable farmers handicapped by the inadequate equipment of their holdings. Most of the farm-houses are good, but, on the other hand, the buildings are in about the same proportion inferior.

Perhaps the position of agriculture to-day, as well as the changes which have taken place in it during the last forty years, can be best appreciated in the manner of working and living which prevails among farmers as compared with that which is said to have been common in the earlier period. Stories are told of the generous mode of life to which farmers were accustomed previous to 1879. It is not necessary to accept statements which give to many of them men-servants and carriages in order to realize the change in conditions. An illustration of the difference may be given which has a very wide application. On an uphill farm a large field lies in front of the house. Through the centre of it runs the line of what appears to have been a road. It turns out to be a track of a private avenue which at one time led from the public road to the house. The present tenant had dispensed with it, since it involved the upkeep of three gates, of the avenue itself, as well as the loss of an acre of good land. The common entrance to the farm served all purposes for him. The full significance of this incident cannot be discussed here. But on the first view the economic position of the farmer seems to have been strengthened, compared with that of his predecessor. Expenditure in living has been reduced, and the immediate means of production have been increased. Such thriftiness may not represent unqualified improvement, but it would betray a short memory, or lack of experience, to assume that it is permanent. There was said to be a time not long ago when, coming direct from Devonshire and its customs, the womenfolk took a full share in the management of the cows and dairy business. With more assured prosperity they have withdrawn from this, and confine themselves to household duties. This is only one side; for in other ways farmers live a fuller life, although they have nowhere lost the habit of working which was imposed on them by adversity, or brought with them from parts of the country where this has always been the custom.

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[1] *Journal of the Royal Agricultural Society*, 1853.

The condition of the labourer in Oxfordshire has been so fully treated in various publications that it is almost impossible to add anything to what is known. There are parts of this district where agriculture may be said to be subordinated to a kind of forestry, and where small industries derived from the latter contribute to employment. Round Checkendon men combine work on their small holdings with making parts of chairs to be sent to High Wycombe. Farther north, about Christmas Common, where the woods encroach very much on the farms, and on to Stokenchurch, the wood industry is supreme. But there is no large absorption of labour, and farm wages are no higher, nor do labourers and their families add to their earnings by the home manufacture of chair legs and spars, as this seems to require more skill and a more permanent status than they possess. Irregular employment is a hardship in the case of young labourers. About the end of the year they are frequently paid off, because there is less to do on the farms. In March they may be engaged again, if they remain in the district, but their maintenance for several weeks while they are receiving no wages seems an unduly heavy burden to throw on themselves or on their relations in view of their scanty earnings when employed. If they hang on between hope and disappointment, they are demoralized, and if they leave for the town, they create what is regarded as a serious problem. The only suggestion of a solution on the spot was the fact that hedges and ditches required much more attention than they received, and that farmers complained of the difficulty of getting good cowmen and shepherds. Perhaps they are not sufficiently careful of the material from which they are made, and it might be profitable to exercise greater foresight in training men for such callings. There is only one opinion expressed by farmers about the housing of the labourers. It is extremely inadequate.

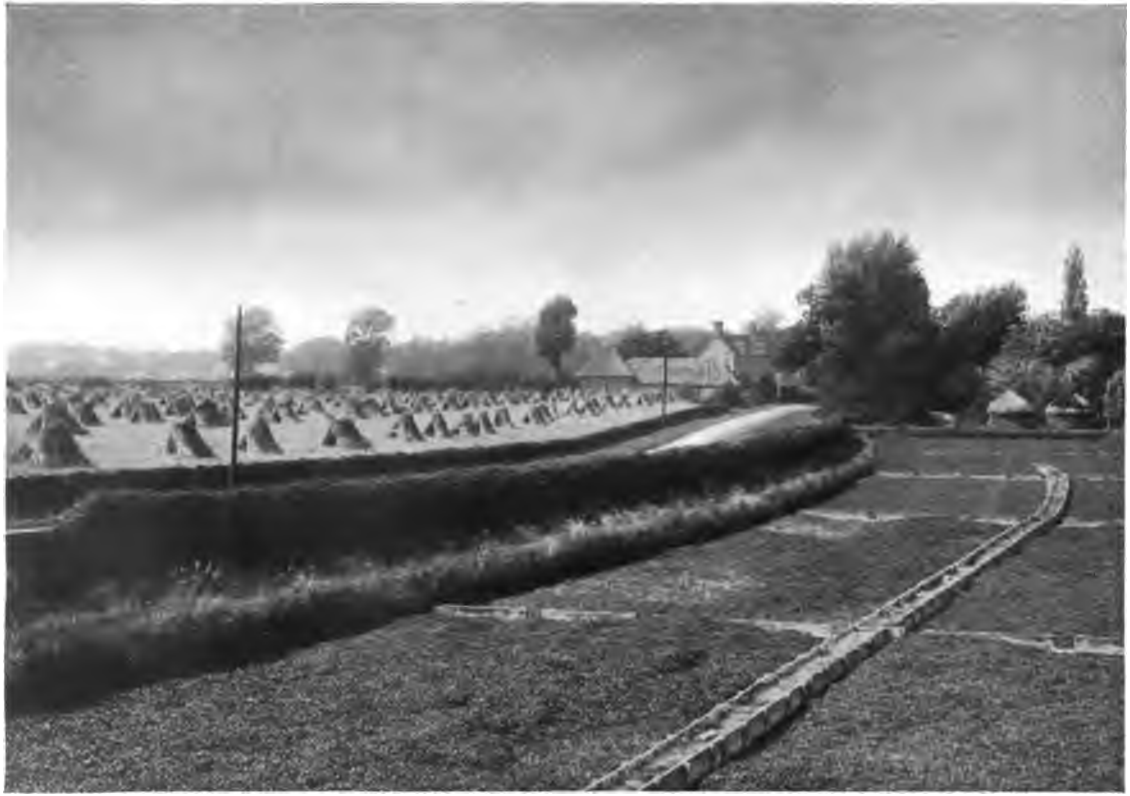
The condition of agriculture in the Chilterns may be regarded as sound. If farmers are not greatly favoured by their soil, they are almost privileged in their market. By its nature the trade in milk, perhaps more than any other, gives a preference to local producers. Like beer it is a bulky commodity, and therefore its transport is expensive. It is perishable and depreciated by carriage. For both reasons the proximity of the producers to consumers will always give them an advantage. There are parts of Berkshire where soil and other conditions might seem to be more suitable for the supply of Reading, and here also there have been changes, but the Chilterns have gained and held their full share of the market primarily owing to their position, since any soil would yield to similar economic conditions. Reading is a good market, the farmers say, and if it continues such, and if they are careful to give what it demands, there is no reason why agriculture should ever sink so low as it did thirty years ago, or why it should not continue to make unbroken progress, as it has done during the last twenty years.

CHAPTER II

FROM THE CHILTERNS TO OXFORD

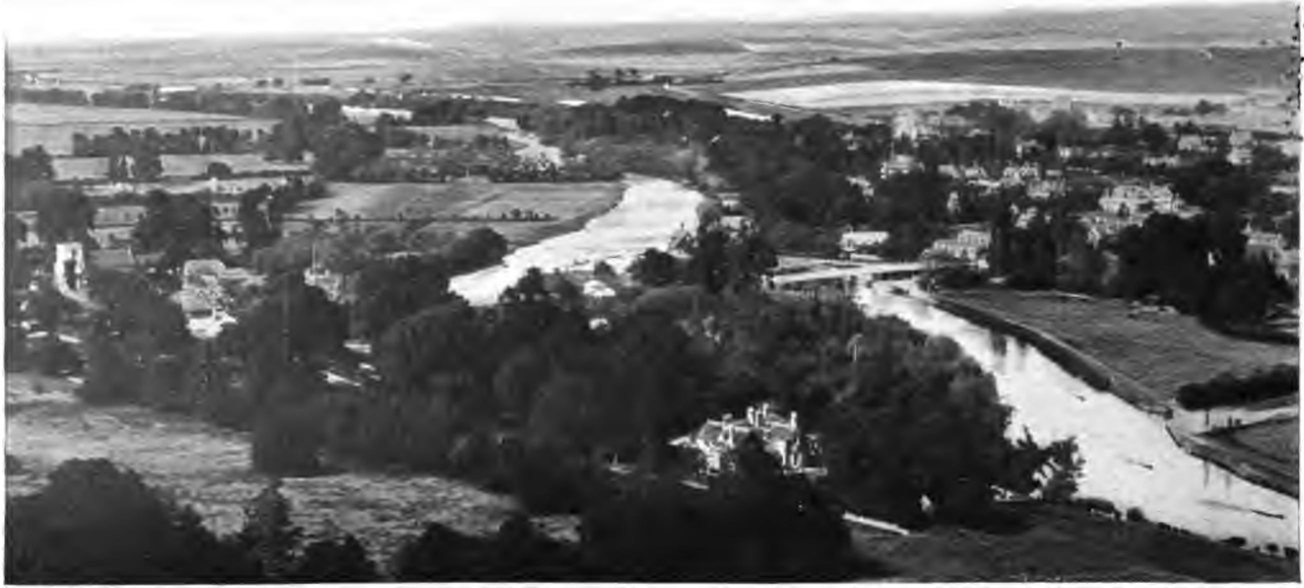
Coming off the Chilterns a little to the north-east of Chinnor, the boundary between Oxfordshire and Buckinghamshire runs across the western end of the Vale of Aylesbury. Its course is extremely irregular until it meets a little stream which flows into the Thame. This river, forming the northern limit of the county for several miles, flows west almost to Wheatley, where it turns and flows south until it joins the Thames at Dorchester. Near Waterperry the boundary leaves the Thame and strikes northwards, and the section under review may be regarded as ending with the line of low hills running from Forest Hill to Elsfield above the Cherwell. It is a large area, the distance between the hills and the city varying from fourteen to eighteen miles, and between the Thames and the south-west to the boundary on the north-east from seven to thirteen miles.

There is considerable variety in this district. As scenery it is always interesting, and in parts very beautiful. Along the foot of the hills there is a line of villages from Chinnor in the north-east to South Stoke on the Thames. The hills mingle with the lower ground in two different ways. Between Chinnor and Watlington they come down abruptly, permitting little or no cultivation on their steep face, being covered either with beech woods or with the grasses which flourish on the chalk, dotted here and there with juniper bushes and gorse. Long and level fields sweep in and out of the recesses at the base of the hills and stretch without interruption, except by the branch railway line between Princes Risborough and Watlington, to the road which connects the line of villages from north to south. This



WATERCRESS BEDS AT EWELME

UNIV. OF
CALIFORNIA



OXFORDSHIRE FROM STREATLEY

sharp contrast is modified south of Watlington. The hills spread themselves a little more, and come down in gentler slopes up which the plough runs close to the top of the ridge. Again, they make themselves into folds in which beautiful villages like Britwell, Ewelme, and Ipsden nestle. By no road, however, will the traveller get to the top of the range without a stiff climb.

Between Watlington and Ewelme the hills do not entirely give place to the low ground, but run in a northerly and north-westerly direction with varying elevations right across the district through Brightwell, Adwell, Tetsworth, and Great Milton, and on the other side of the Thame they reappear at Cuddesdon and Shotover. The main features of this central part of South Oxfordshire can be grasped by travellers on the two London-Oxford roads. The shorter of these, which comes through High Wycombe, seldom makes a détour to avoid heights and thus affords clear views. From the foot of the Chilterns it runs between ploughed fields until it crosses the Chinnor-Watlington road. Here it meets the grass parks and woods of Aston Rowant and of Adwell, an introduction to the scenery and farming that prevail to the north-east. Through Tetsworth the same conditions hold, and as the road gets to the top of the hill on the west it roughly divides the corn-growing from the milk-producing country. On the left the fields, more of them cultivated than in grass, fall away towards the wide valley of the Thames, away from the railway line by which so much of the milk is sent; on the right the space between the road and the Thame is devoted to grazing. The longer road, coming through Henley, runs almost parallel to this, but after leaving the Chilterns it traverses a more level country from Benson almost to Nuneham. On both sides the whole area is under corn, with sheep and bullocks as live stock. In the south-east corner between Goring and Ipsden, and even as far as Ewelme and Britwell, Oxfordshire furnishes an example of farming that is more typical of the Berkshire and Wiltshire Downs. The slopes of the hills are divided into large farms, the fields of which are almost unbroken by fences or trees. From Benson onwards the villages themselves and the trees round them give the country a more clothed and hospitable appearance. Both roads climb the convex side of the ridge which surrounds Oxford in part. Between them there are landmarks in the hills at Cuddesdon, Garsington, and Shotover. The last, being 560 feet high, is the most prominent, but apart from its height it is not remarkable. It gives more pleasure to look from it than to look at it. From Iffley on the Thames to Elsfield near the Cherwell, the concave side of the ridge forms nearly one half of the basin in the centre of which Oxford lies. The fairest part of this side is between Forest Hill and Elsfield, and its beauty is largely due to its cultivation.

The situations of market-towns in South Oxfordshire appear at first sight to be singular. They are all boundary towns, offering impartially market facilities to two counties, and receiving similarly unprejudiced support from them. The Thames, with all that it represents in the life of Berkshire and Oxfordshire, between which it runs for some seventy miles, largely accounts for this reciprocity. Reading, Wallingford, and Abingdon are separated from Oxfordshire by the length of bridges over the river, while Henley and Oxford are no farther distant from Berkshire. Thame, on the other side of the county, is shared with Buckinghamshire. There used to be markets at Watlington and Wheatley, which are some distance from any boundary, but they were unable to maintain themselves beside the more influential centres. Of the Berkshire towns Wallingford has probably always been more than half in Oxfordshire for business as well as for judicial purposes. Abingdon, which is situated opposite the extremity of an outlying part of the county, embraced in a bend of the river between Nuneham Courtenay and Clifton Hampden, gives less to it and gets less from it.

There are few industries outside of agriculture in this section. The limekilns and chair-turning of Chinnor play only a little part. Even the towns exist primarily, if not solely, to serve the needs of the farming population, Thame and Watlington showing no signs of invasion by any movement calculated to make them more urban than they have ever been, and Wheatley making itself useful with its brick, tile, and timber works. When commercial men, therefore, say that business is good in these little towns, this may be taken as an indication that farming is prosperous.

The division between the two systems of farming is fairly clear. Close to the Chilterns, then in the south-western half of the district next to the Thames, and again from Forest Hill to Elsfield, corn, sheep and cattle are the chief products. This is the oldest style of Oxfordshire farming. In the valley of the Thame, and within a considerable distance of the stations from Thame to Littlemore, milk is produced. Beginning with the Chilterns, all the way from north-east to south-west, either on the level or on the slopes of the hills, and from one or two miles west of them, the soil on which the farmers have to work is the lower or middle chalk, with occasional patches of gravel. This fact may be said to determine the style of cultivation, for it has been long established that the growing of corn, the feeding of sheep, and optionally of cattle, is the proper system of agriculture to pursue on this kind of land when the influence of no special market is present. But so great is the uncertainty in these things, and so restless and changeable are men, that the opinion cannot be held any longer in its integrity with regard to this district. A Devonshire farmer, wherever he is, can hardly give up cows. Sheep are being left out of the system to a great extent, chiefly in the south, while corn and hay with some cattle in most cases have been given the whole field. This movement is asserting itself steadily, if not rapidly, and is raising some interesting questions in the minds of the men responsible for it.

A description of what is being done between Chinnor and Watlington may be attempted with reference to one or two farms. There is an activity which is pushing cultivation beyond the limits within which it has been practised for many years. On one farm at a point where the slopes are less abrupt there are 118 acres above the Icknield Way which were cultivated when the price of corn was high. The present tenant set himself to reclaim this, taking it in by stages. His method of cultivation has been simple. Oats were the first crop, and for them the land was given a dressing of 6 cwt. of bone meal. In the autumn the stubble was ploughed and 5 cwt. of kainit applied. This was for swedes in the second year, which also got 4 cwt. of dissolved bones—a manure which some farmers think hardly worth its price—and ¾ cwt. of nitrate of soda in spring. The swedes were eaten off by sheep. In the third year barley was taken without manure being given, and seeds followed in the fourth year. The land is now in good heart and clean. Having been cropped for only four years it has not yet left a profit, but the farmer is confident that it will.

The energetic working of this place is attractive. The system followed seems to be a five-course—wheat, barley, roots, and oats, with a short fallow in the fifth year. This differs from the full, bare fallow, because the land is worked free of a crop for only a few months instead of for a year. Trefoil sown with the corn in the spring of the fourth year is eaten off by sheep during May of the fifth year. After this the steam tackle is put on, and the land is ploughed and cultivated frequently until the wheat is sown in autumn. Clover comes once in seven years, and it was said that a crop of seventy-four tons of cow-grass was cut on twenty-five acres in 1913. Two kinds of manure had been tried side by side on wheat—5 cwt. of dissolved bones and 7 cwt. of basic slag. The former gave better results. The mixture of which this farmer now makes most general use is: 10 cwt. 30 % superphosphate, 3 cwt. 19·75 % sulphate of ammonia, 4 cwt. bone flour, 3 cwt. sulphate of potash, 48 % pure.

The views of the farmer as well as his methods were interesting. There was a kind of 'death or glory' spirit here, a determination to reach a high standard of farming, and to cling to it with hands and teeth, as it were, when it was attained. There was also a generous spirit. 'I farm up to my last shilling,' he said, 'and I believe eighteen out of twenty farmers round me do the same. But we have not really begun to farm yet. The longer I live, this feeling becomes stronger.' While his predecessor had kept between seventy and eighty cattle, he had increased the number to one hundred and forty-three, but he regarded this and other advances as a poor beginning. Nevertheless there were tributes to his farming, and high prices are paid for his Shorthorns. The remark about farming up to the last shilling suggests that it will be good for these farmers and for the industry if prosperous times continue until they save a little, so that they may be able to tide over adversity without reducing their working capital.

It is pleasant to be able to record this improvement in agriculture, but it should not be assumed that the progress has been equal or universal. In some cases so much ground was lost during the depression, and tenants have had so little capital, that not much headway has been made. Difficulties, some of them no doubt inherent in the conditions, and others left as a heritage from a previous generation, confront many farmers. Weeds are abundant, and three reasons are given to account for this—the inadequate amount of labour employed, the lack of care in selecting and using seed, and the nature of the soil, which has the reputation of welcoming and harbouring weeds. A significant fact in connexion with this is that labourers will not undertake to weed by piecework. They have had the experience of taking contracts under which they earned no more, while they worked much harder, than when they were paid by the day. On the slopes of the Chilterns the farms are large, as one man generally occupies several holdings, and where two or three of these have been allowed to become foul the elimination of the weeds requires considerable time and money.

The question of keeping the land clean has for this reason perhaps an unusual importance attached to it by successful farmers on the large holdings, and it is mixed up to some extent with the question of keeping sheep or of dispensing with them. One farmer who farms nine hundred acres on the chalk and gravel has a very definite opinion that sheep do not pay, and just as profound a belief that bare fallows are profitable. However much one would have liked to suggest doubts on the first point, it was difficult to do it in face of practical achievements. The rotation here is (1) wheat, (2) barley or oats, (3) oats or barley, (4) swedes and fallow. Nitrate of soda is used in the third course, and with farm-yard manure this is all that is given, one hundred cattle being kept. Every piece of land is fallowed, the purest chalk as well as the lightest gravel, and the fallow is worked continuously. Between six hundred and seven hundred acres are ploughed, and about one hundred acres are fallowed every year, the whole being thus covered in six or seven years. All the good effects attributed to chalking on the Chilterns are here said to result from fallowing. This may be due to the better tilth, increased nitrification, and earlier sowing which are possible, and also in some measure to the greater amount of moisture which may be retained in soil well cultivated without any crop—the result obtained by 'dry farming' in some countries.

There is something remarkable in the fact that the question whether fallowing is profitable or not should still appear so far from being settled. The opinions of farmers in every part of Oxfordshire to-day seem to be as diverse as they were in 1807, when Arthur Young made his survey. 'Mr. Davies of Bloxham', he says, 'never saw any land upon which a naked fallow is necessary; none even on the stiffest soils. He has been a practical farmer many years on a large scale, and has seen many counties minutely in his business, but was never yet convinced that any such necessity existed. . . . Mr. Cozins, of Golder, is a decided advocate for frequent fallows. Upon the strong soils of this farm he is of opinion that they must recur every third year, insomuch that he fallows after beans and clover and vetches. . . . In fallowing for wheat he ploughs the land five times, not for freeing it from couch, but for the sake of letting the sun into it.

'I have published cases in which an extraordinary degree of fallowing has produced bad crops: Mr. Fane found a very different result; for having fallowed one year for wheat on his Chiltern-hill farm, and being disappointed in sowing it, he continued the fallow another year, and then sowed wheat, and the produce was six quarters per acre.'[1]

It is a little farther south that the war against the sheep has been most relentlessly waged. On a farm at Crowmarsh, where formerly a large and famous flock of Hampshire Downs was kept, there has not been a sheep for nineteen years. Cows were kept, but even they have been put away. This step was taken on the basis of a cool, economic calculation. The capital invested in the cows yielded only a small percentage more than an equal amount invested in the growing of corn. This did not seem enough to compensate for the greater worry and for the additional work involved in personal supervision. Almost the only things sold are corn and hay. Little farm-yard manure is used, and it is seldom that mustard or other green crop is ploughed in for humus. The farmer relies practically on artificial manure, which is used in the following mixture costing about 22*s.* per acre: 2 cwt. superphosphate, ½ cwt. sulphate of potash, ¾ cwt. sulphate of ammonia, and ½ cwt. bone flour. There is no regular rotation. On the chalk, which occupies the upper part of the farm, barley, cow-grass and vetches are grown, and on the lower part wheat takes the place of barley. The land is only fallowed in small areas where it may have become foul.

This experiment has influenced neighbouring farmers to a limited extent. One has reduced a large ewe flock by half, and now sells hay and wheat straw, with the proceeds of which he purchases artificial manures. Having farmed successfully on the old system for a great many years, he admits that the new is more hand-to-mouth in its nature, that there is less of an endeavour to store up a reserve, or to control the texture of the soil. The development is not attended by over-confidence or assertiveness on the part of those concerned in it. This feature perhaps distinguishes it from some experiments which have been made before. A singular coincidence is that the farm where the experiment was begun adjoins Howberry, the place where Jethro Tull about the year 1700 commenced cultivation on similar lines. It was at Prosperous Farm, Hungerford, that he finished, where, as Lord Cathcart says, 'he grew without manure successive wheat crops on the same ground for thirteen years, and superior to that grown by his neighbours in the ordinary course, labour and tillage supplying the place of manure and fallows'[1]. The editors of the fourth edition of Tull's *Horse-hoeing Husbandry* criticize the farmers for their cold reception of his theories and methods, but, omitting any reference to his achievements in inventing and improving the drill, it is possible to believe that there may have been a want of balance in the system of agriculture which he advocated and pursued. Farming has its roots in economics as well as in chemistry, a market for other things than corn justifying their production.

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[1] *General View of the Agriculture of Oxfordshire*, 1807.

At least, not far from Crowmarsh men were found who held different views with much openness of mind. One man with a large holding said he would not call his business farming, if he had no live stock—and he had them—forty-five bullocks and heifers, forty-five cows, sheep, pigs, brood mares, and poultry which seemed innumerable, with all the crops appropriate to the district. Enthusiasm for all-round farming is an obstacle to the extension of corn-farming and nothing else, and besides there is the question of demand and prices. The belief that balance is necessary in these matters never quite forsakes English farmers, and if it occasionally hardens into undue conservatism, it does not seem to have done so in this case. The majority are open to receive and entertain new ideas. There are men of individuality who go some little way of their own with experiments, but they are ready to consult and to be advised, and express a desire to have the assistance of the county instructor in agriculture more often than his attention to all parts of the county permits.

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[1] *Journal of the Royal Agricultural Society of England*, 1891.

After the thousand-acre farms between Goring and Ewelme, and after the chalk, some holdings which maintain the best traditions of Oxfordshire farming are found between the hills and Dorchester. They are partly on the valley gravel and partly on the gault clay, but there is much useful loam. The rotation is (1) wheat, (2) roots, green crops, or fallow, (3) oats or wheat, (4) barley, (5) beans or clover. It is the system under which sheep are kept in green food all the year round. Rye is ready to be eaten in April, trefoil in May, trifolium in June, winter vetches in July, spring vetches in August, summer vetches (sown in May) in September, rape and turnips in October, then turnips, kale, swedes, and mangolds serve throughout winter and spring. This is farming which calls for intelligence and energy, and which wins respect no matter how old-fashioned it is. On the Berkshire side of the river the same system prevails, and it is worth seeing, at the beginning of February, ewes and lambs—the latter almost as tall as their mothers—eating luxuriant crops of kale. The gravel, which is very general here, burns, and the only consolation seems to be the comparative one that it burns worse after sheep have been folded on it, and less at other times. Two reasons are given to explain this. Corn that grows rapidly, as corn after sheep does, is considered to be more tender and susceptible to the attack of drought than a crop of slower growth. Again, after sheep, it is almost impossible, even on lighter soils, to get as fine a tilth as where the land has been untrodden and well cultivated.

This system of farming is generally so admirable, and occupies such an important part of the county, that it is worth describing in some detail. To cross the district from Goring to Ewelme, from Benson to Little Haseley, and from Dorchester to Stadhampton, is to be impressed by the achievements as well as by the possibilities of English agriculture. The appearance of the fields, with scarcely a fence, and with trees relegated so often to the neighbourhood of villages, to the banks of rivers, or to roadsides, suggests decks cleared for action. It is possible that these decks are not so fully manned as they once were, or as they will be, but progress is being made. In their aspect the wide bare fields do not produce a monotonous effect, for rows of poplars and the more common elms and sycamores round the villages break any dull uniformity. The farmhouses are frequently situated in or near the villages. Behind or beside them, very often just on the village road, is the yard for the bullocks. Open sheds run along one side or more. Feeding troughs are placed against the walls in these, or sometimes they stand in the yard, strong, square boxes supported by stout posts, high enough for the animals to feed comfortably from them. If the place has been handsomely equipped, these troughs in the open are protected by picturesque, thatched roofs, like those erected over the gateways of village churches—the lychgates. The bullocks are generally fed on cake, bean meal, roots, and straw or hay. Abundance of straw is given them to tread down. The cost of feeding is less than it used to be, one man who commenced farming in 1874 saying that linseed cake which is now (spring, 1914) about £8 per ton was then £15.

With the exception of ewes at lambing-time sheep are less fortunate than bullocks in the matter of shelter and of a bed, but if possible they are better off in their food. The fattening of lambs and of tegs is an active piece of farming. During spring they are folded on rye and clover, and this is only a beginning. Mangolds are distributed over the ground. The supply of cake in their troughs is seldom allowed to be exhausted, this generous treatment being sometimes carried to the point of waste, while clover hay is carted to them. Lambs born from Christmas onwards partake of this never-ending meal as soon as they learn to eat. They may be sold at any time after they are three or four months old, and this year they realize from 40*s.* to 45*s.* at the latter age. This may be properly called an intensive system of farming practised on large holdings. It involves the employment of a considerable amount of labour. All the food except the growing crop must be carted, and water as well, and for the crop the folding hurdles must be constantly changed. On one holding where 1,500 sheep are kept, seven men are employed all their time during winter in attending to these. Hampshire Downs are the most common breed, and they are often crossed with Oxfords.

This system is broken into slightly between the Thame and Oxford. The lighter soils that are adapted for folding sheep are also suitable for growing potatoes, and these have been given a place among the crops. By their position in the rotation they displace roots to some extent, and therefore reduce the number of sheep. It is from Dorchester to Culham that the development is most marked, on the valley gravel and lower greensand. On one farm there are one hundred acres under potatoes, and on others from twenty to fifty acres seems to be a common area. No attempt is made to get early crops owing to the fear of late frosts and generally of a climate which has a reputation of not being consistently genial in May. The seed is sprouted in boxes before it is planted in some cases—this custom having been introduced by a Scottish farmer sixteen years ago. At Clifton Hampden light, single-handed boxes made in Dublin are used, being less clumsy than the large ones, which require two persons to carry them along the balks. The season 1913–14 was very unfavourable to this crop in Oxfordshire. Prices were low, the loss on account of rot was heavy, potatoes shooting and growing in the clamps to an unprecedented extent during the mild winter, and young tubers of unusual size being found when they were uncovered in the spring. Over a series of years, however, the experiment has been profitable and is now being tried on a few more farms for the first time.

In the year 1865 rinderpest visited the cowsheds in the country, and did its work very thoroughly among those situated in London, killing off most of the cows. Milk-sellers from the City came to Thame, and offered terms to the farmers which induced some who were making butter to supply them with milk. The price was 11*d.* per gallon. This was the beginning of the trade which has increased so much. Reversion to butter-making was practically impossible after the machinery had remained out of use for a few years. There are two destinations and two means of conveyance for this produce—Paddington by rail, and Aylesbury by motor wagon and trailer. From Littlemore, Wheatley, Tiddington, and Thame hundreds of churns are sent daily, and the congestion of milk-vans at the two last stations in the morning is remarkable. Farmers reckon that it is wasteful to take up milk production with fewer than thirty cows. Less will not pay for the time of men and horses going to the station. There are several small farms about Sydenham and other parts of from one hundred and fifty acres which cannot keep so many cows. On some butter is made, and on others heifers are reared and sold in calf. A few farmers who have spent most of their lives in the strenuous and exacting work of producing milk have abandoned it, and have resorted to the feeding of bullocks and heifers. They obtain calves in sufficient numbers from their neighbours, without making a demand for pedigree or highly bred animals. Thus, taken as a whole, the styles of farming pursued on various holdings complement each other in some measure.

The milk industry here differs in certain respects from that which was found in the Chilterns. There are men who remember the days before it existed, but none who can recall the time when butter was not made from the milk of the cows which grazed on the meadows by the side of the Thame and around Tetsworth. There may have been some quickening of methods since milk production took the place of butter, but they are not considerable. The maintenance of the supply in winter calls for the purchase of foods, and on a farm of two hundred acres with thirty cows the cost of these approaches £100. In contrast with the practice on the hills, and in districts farther north, the cows lie out all the time, winter and summer, no matter how cold or wet the weather may be. This custom of the country impresses itself on farmers who come from other parts, and who have been used to other ways. For various reasons it might be thought it would give way before what is regarded as consistent with the greatest development of the animals and with a fuller yield of milk, but the opposite happens. The older farmers regard it as the only proper custom for securing health and also milk.

Under this system pastures count for a great deal in the economy of the farm. When live stock find a large part of their food and all their shelter outside, grass and hedges are perhaps more important than sheds, but somehow it is incongruous to conceive of this increasing business being developed without greater facilities. For the improvement of pasture the first essential in several places is better drainage. One farmer lost eight cows last year out of a herd of thirty, and he attributed their deaths to 'rot', which may have been some form of tuberculosis, induced by spending so much time in meadows that are long immersed in water. It is a peculiar feature of much of the land here that the drainage of the immediate surface is difficult. Whether the surface soil is clay or sand does not seem to matter. Immediately beneath is impervious clay, and consequently drains, to be useful, must not be deep. The extent of the deterioration and loss which result from these conditions calls for some more concerted action, some more general scheme, than is possible where the initiative and the main part of the expense are left to tenant farmers. There seems to be little doubt about the benefits of drainage, the additional yield of crops consequent on it being said to repay the outlay in a few years. Mole drains do not appear to be appreciated, although their merits in relation to their cost seem to be established in other parts.

Farmers with most experience of Oxfordshire are almost unanimous in referring to the district lying along the Thame about Waterstock as containing the best land in the county.

With a sort of forgetful covetousness they frequently skip across the river and include Ickford and Worminghall, which are in Buckinghamshire, and where, they say, there is the best land of all. Although, therefore, there is too little of this quality on the Oxfordshire side, there is some which does well, if it is heavily stocked; the kind of land which, only up to a certain point no doubt, seems to give more the greater the demand that is made upon it. The parts that flood in winter and spring along the course of the Thame, and some parts above these on good loam, afford grazing which finishes bullocks for the market without the assistance of cake. Improvement by harrowing and manuring is carried on in places, but moss and coarse inferior grasses are very common in many parts, indicating that a great deal is still to be done in this direction.

From the 'Three Pigeons' on the Tetsworth road, towards the south-west, cropping begins to divide the farms with grazing, and farther down, by Little Haseley and Little Milton, corn, sheep and bullocks are the features of some good farming. The land is generally light enough to permit of folding; the holdings are large, and wide stretches of wheat and barley are grown. It is the typical, old, Oxfordshire agriculture in this part, with the addition of cows on several farms.

From Nuneham and Wheatley to Oxford there is a little of every kind of farming, milk constituting the greatest proportion of the output, and for this Oxford itself provides a considerable market. About Garsington and Cuddesdon there are moderately large farms devoted in about equal parts to cultivation and grazing. The plateau nearer the city, between Littlemore and Horspath, is divided into smaller holdings, some of which appear to have little to recommend them in their management, while others are worked in a creditable way as market gardens. It is perhaps the inevitable nondescript farming which is so general in the neighbourhood of towns.

From Chinnor to Crowmarsh along the foot of the hills the changes among farmers have been as numerous as on the Chilterns, but nearer Oxford, both in the arable and in the milk-producing districts a considerable proportion of the farming families have been in the same holdings for generations. There seems to be no single explanation of this, the chief reason apparently being that the poorer land on the chalk does not hold its cultivators, while the clay, cold and ungrateful as it is sometimes called, has kept at least one family on it for three hundred years, and several others for most part of a century. On the economic side again, the growing of corn has always been more precarious than the production of milk, the price of the latter fluctuating less, and the men whose lot it was to cultivate less favourable soils had a worse chance of getting through the depression.

The difference between the two styles of farming is well illustrated in the farmers themselves. The men with arable land who came through the bad times with success, and who were able to take large farms, have now more leisure and almost certainly more money. With the improved price of corn, and, in many cases, with more intensive cultivation, they are obviously in a better position than those whose milk is sold at the same or at only a slightly higher price. They can get away from their business more easily, and a few of them can afford to hunt. These are facts which indicate that corn-growing is more speculative than other kinds of farmings. Perhaps this is less often borne in mind than it ought to be, and if men who are fortunate enough to make money in good times were also fortunate in getting more stable investments for some of it, it might steady them when new shocks are encountered, as they may be.

While much more is being put into the cultivation of farms, the tide still seems to be on the ebb with regard to their equipment. There are exceptions. Some farmers paid tributes to their landlords. The houses in the majority of cases are good, but the buildings, both in their quality and in the amount of accommodation provided, were a subject of complaint to a tedious extent. There was too much unanimity on this point to make it possible to believe that there is not a grievance, and that farmers do not suffer under a serious disability. While steps for the increase of production have been taken by the farmer, he finds himself restricted by want of facilities for handling stock and crops. In some parts the buildings are so bad, including the houses, that the management and working cannot be good. This applies to a district south of Thame. It was exceptional, but there were cases where the women-folk complained that bedrooms were uninhabitable owing to the rain coming in. Where things are most satisfactory, the landlord is in the habit of paying a personal visit to the farm, but this is rare.

The question of a water supply on dairy farms calls for attention. Outside of the Thame urban district nothing is done to provide for this, except by individual enterprise, and even where this is active, too little is achieved. Water is pumped by hand for the house and for cooling the milk, but it is heavy work. The cows and other animals have ponds or streams.

In matters connected with live stock probably little progress has been made in recent years. But with regard to cattle it is necessary to remember that a reasonably high standard has been attained by old methods, and that we must speak with respect of such a market as Thame, where buyers so often obtain good animals, and sellers receive such high prices. If judgement and skill among cattle are not transmitted from father to son by heredity, they can be communicated by training from the earliest years, and perhaps these qualities have done as much for farmers in this part as for those in most parts of the country. But more is needed and can be obtained, and in a district so wholly given up to milk the methodical management of herds based on milk records ought to be more widely adopted. Where herds number from thirty to sixty cows, the possibilities of increasing the yield are very great.

At Albury a pedigree herd of Dairy Shorthorns was established in 1912, the intention being to develop it on somewhat select lines. The herd is founded on the Bates blood, and all that enthusiasm and knowledge of pedigrees can do to ensure success is being done by the owner. There is room for such an enterprise in the district, for if achievement and development are measured and directed through the medium of milk records and not exclusively by considerations of blood, such a herd should serve a good purpose both in the country and in Oxfordshire by providing bulls for farmers who are beginning to appreciate the importance of attempting to increase the yield of milk on perfectly definite lines. At the moment there is reason to hope that this effort to produce high-class dual purpose Shorthorns will be supported by a growing market for them in the immediate neighbourhood.

With regard to one class of live stock, there seems to have been a considerable improvement since Mr. Clare Sewell Read prepared his report on Oxfordshire Farming in 1853. The farm-horses of to-day do not deserve the sweeping criticism he passed on those of that time. He spoke of the 'road team, fat and well-favoured', and of 'the plough team which will not bear inspection'. There is still much to be done in improving the horses on the smaller farms, and on some of the larger ones, but on most of the latter useful animals are kept for all purposes. During this spring (1914) a Heavy Horse Society has been formed at Thame, and a good horse has been secured. While this should be an advantage to smaller farmers it is a sign of progress among the class as a whole, for Oxfordshire farmers being generally efficient and self-reliant, have not fully appreciated the benefits of association for the advancement of their business. They meet at market, perhaps out hunting, and at a game of cards, and almost certainly at a steeplechase, but they have not seriously got into the habit of meeting to discuss their interests and work. Now that they are putting down their subscriptions to support the scheme of the Board of Agriculture and County Council something ought to be accomplished. There is a branch of the National Farmers' Union in the county, and several branches of the Dairy Farmers' Association.

It is somewhat difficult to indicate the condition of agriculture in this part so far as it is represented by energy, ability, and financial equipment of the farmers. No great change in markets has called for a complete readjustment of methods, as was the case in the Chilterns, yet many farmers for various reasons have been unable to keep their positions. In some cases neighbours have taken their places, in others men have come from all parts of the country, a few from Cornwall and Devon, a few from the North of England and from Scotland, and the majority from the neighbouring counties. The development noticed in the Chilterns, where farmers who had proved their capacity in one farm and obtained one after another in addition, is more marked here. Perhaps those men who came through the depression and not only held their ground but extended their holdings deserve respect of a special kind. But there has been a little more dash and energy displayed by men who got their early training in farming elsewhere, and this activity is not unaccompanied by judgement and shrewdness. The absorption of several holdings by individual farmers, assisted sometimes by their sons, has occurred mostly in the corn-growing area. One farmer who came to 400 acres in 1874 has now acquired 1,200 acres. Of this area 1,100 acres are ploughed, store bullocks, lambs, and sheep being sold. But it was between 1893 and 1900 that the largest influx of new farmers took place. In 1897 another farmer came to 300 acres, and now he has also 1,200 acres. His live stock consists of 300 cattle, 40 of which are milk cows, and from 700 to 800 sheep. His bill for feeding-stuffs is £1,000. He is about to give up his cows owing to the difficulty of getting labour. Another farmer took 500 acres in 1900, and he has now 2,000 acres. He employs about 60 men and boys on the four holdings which make up this farm, and spends from £250 to £300 on steam cultivation. Here are 220 cattle, 100 of them milk cows, 1,500 sheep, and 60 pigs. On all these farms the full-blooded system of feeding and manuring heavily, and of cultivating for green food, is followed. The process has been largely one where farms worked by landowners since the depression have fallen by a sort of inevitable law into the hands of practical and successful farmers in their neighbourhood.

CHAPTER III

NORTH OXFORDSHIRE EAST OF THE CHERWELL

To pass from South to North Oxfordshire on the east side of the city is not only to turn one's back on the Thames, on main roads, and on open, cultivated fields, which lend a certain animation to the scenery, it is to enter the part of the county in which there is, perhaps, least evidence of activity. The lighter soils on the south side of the ridge between Forest Hill and Elsfield give place to Oxford clay on the north, and grass takes the place of arable land. Woods cover a large part of the area, hiding the fields, and giving to the whole a rather sombre appearance. There is no lack of picturesqueness, for of its kind there is nothing finer than the wide view obtained from the neighbourhood of Beckley.

One may approach this part by several roads, and receive slightly different impressions of the country from each. Going through Horton things wear a favourable aspect. Woods and fences are orderly and well-kept, and the fields in hay or in pasture seem to be doing what is most appropriate. Its elevation gives this section a comparative advantage, a line of rising ground running across the valley and connecting the hill at Woodperry with Muswell Hill in Buckinghamshire. On either side of this there is an area of inhospitable land. To the west, Otmoor with its floods keeps men entirely off, villages like Noke, Oddington, and Charlton seeming to clamber up the slopes of elevated ground on its borders to escape from the water. To the east, again, Menmarsh is only a little more cordial in its invitation. For good reasons, no doubt, no villages have

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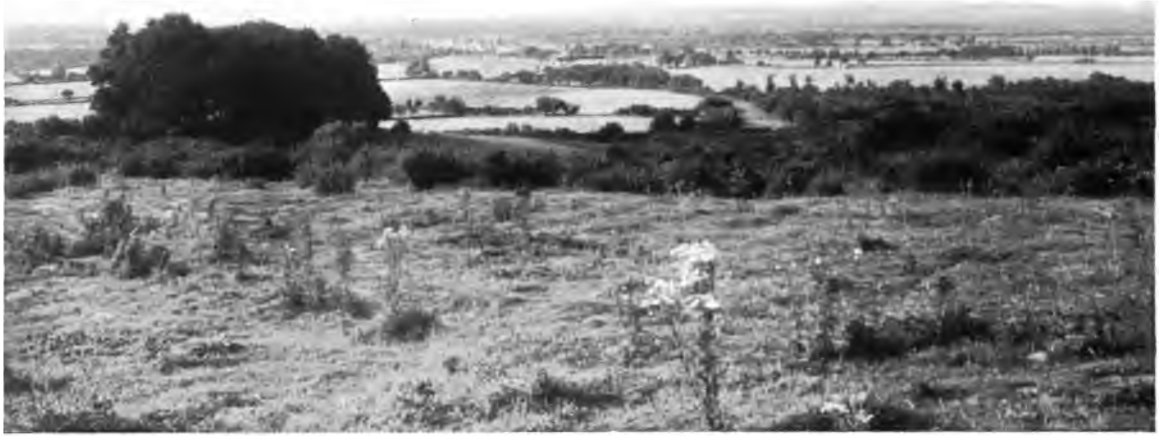
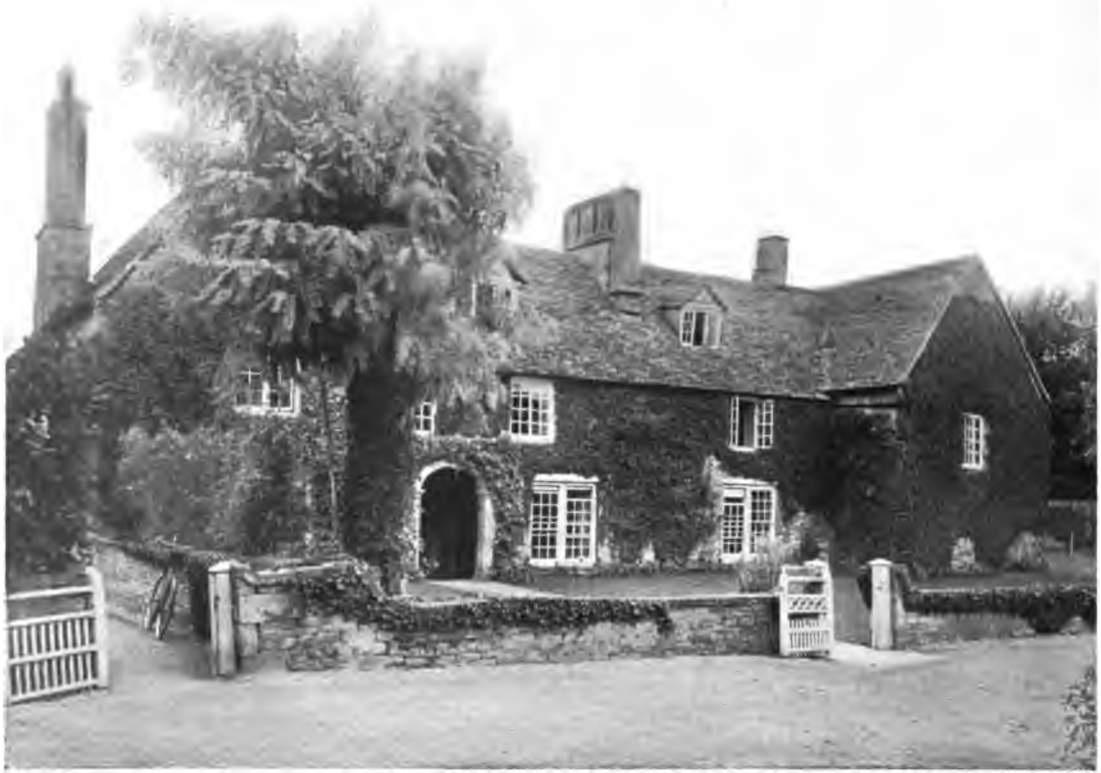


OTMOOR FROM BECKLEY HILL



FARM-HOUSE IN SOUTH-WEST OXFORDSHIRE

been erected, and but few scattered houses. From the road by Beckley, across Otmoor, if any one is reckless enough to follow the footsteps of the Romans through swamps, the slowest possible style of farming is seen, on land that cannot be cultivated because it is subject to floods; and from the road by Stanton St. John a system which is even more tantalizing prevails, because cultivation is of the half-hearted, indecisive kind.

It cannot be said that this is a blot on Oxfordshire agriculture, for there are causes which explain the imperfect development of the area. But the occurrence of this stagnant piece of farming here is anomalous in some of its features. On the eastern side, just on the borders of Buckinghamshire, there are small holdings or allotments, and on one of them a woman may be seen during the winter ploughing her lot with a single horse. This does not mean that women here generally plough, but somehow, whether any artistic motive has been at work or not, this single case seems to be quite necessary in order that a true appreciation of conditions may be gained. One might imagine that a specimen of agriculture as it is practised in parts of Ireland, or of the Scottish Highlands, had been transplanted to Oxford's back-door. Such a phenomenon serves to remind us that here and there things have not advanced far from the primitive state. It is cold, grey soil which these small-holders cultivate, and for their pluck they deserve to succeed. But their methods and the means at their disposal seem hardly adequate for the task of subduing this unattractive area.

Otmoor is a basin into which the water is drained from all sides. The river Ray flows through it, and there is so little fall on this stream that its waters frequently back after rain, and flood a wide district. Until 1830 it was common land, and its enclosure at that time was attended by serious riots. The right of grazing under the old system belonged to all who could 'draw smoke', that is, to every one in the villages round who owned a habitable house. A sentiment in favour of these conditions still lingers among villagers. They consider that it was worth a good deal if they could put out a heifer, sheep, or horse which 'grew into money'. All that is gone, and the improvement made since enclosure consists in draining under the Thames Valley Drainage Scheme. This has the effect of taking the water away a little more quickly after flooding, not of preventing it. Except in a few cases, where parts of the moor are let separately, it is split up amongst surrounding farms. A light stock of cattle is put on the pastures, or hay is mowed, the tenants saying that they can only reckon on getting a crop once in three years, taking a period of a generation, since the floods destroy it in the other two. During a dry season like 1913 they have a heavy yield. The hay itself has little value as a food, and cattle or horses fed on it soon grow lean. It is therefore sent to London, being considered good enough to make chop for horses there.

Farming on clay is seldom an exhilarating business, and it is a relief to come on little breaks of lighter soil—stonebrash—at Islip and Charlton, and still more at Bicester and northwards. As in so many parts, there was a time when much more of the land here was cultivated, but the change in its use may perhaps be justified. The demand for milk is laying a foundation for some active farming in its production, and if improvement of the pasture were undertaken, there is no reason why both output and remuneration should not be largely increased. Horton marks the western limit of the district from which milk is sent by motor to Aylesbury, the motor coming from Thame to Oakley in Buckinghamshire, and lifting there the churns which have been collected from several farms in the neighbourhood. For places like Piddington, Blackthorn, and Launton farther north the Oxford and Bletchley railway affords facilities, while beyond that the Great Central and the new Birmingham line of the Great Western give connexions with the west end of London, so that there are few parts more adequately served in this respect. A complete change in the dairy produce as well as in the means of carrying it to market has taken place since Arthur Young's visit.

'Waggons', he says, 'go from Bicester to London with butter, taking ten tons per week, chiefly loaded between Bicester and Wheatley.'[1]

There are not many features of the farming between Stanton St. John and Bicester calculated to inspire one with enthusiasm. It is a grazing district, and farming for pasture has not received the same attention as farming for corn and roots. Agricultural colleges have taken up the subject, but there are many areas, and this seems to be one, where no serious or far-reaching attempt has been made to improve conditions. The idea of intensive cultivation as a method to be applied to the growing of sound grass has not been accepted, and yet there seems to be no reason why it should not be applicable. By draining, by manuring, by opening up the turf to permit of aeration, and, in many cases, by introducing proper seed, improvement can be effected. One custom too frequently pursued here is the mowing of hay without manuring, and this reduces the quality and amount of the yield, since more cannot be taken off the land year after year than is restored to it. Most of this part is on the Oxford clay, but there are modifications in the surface soil towards loam about Ambrosden and Merton. The drawback here is that with the impervious subsoil and the level ground it is difficult to get the water off, and farmers must wait patiently until it drains slowly away between the high ridges.

Farther west, from Islip to Hampton Poyle, some cultivation is possible, and wheat, beans, and clover hay are grown. But the working of clay is always an arduous and often a heart-breaking task. Keen men, impatient at seeing so much of this land not under the plough, have entered farms not far from here with the intention of mastering the clay, and have been compelled to confess that they had undertaken too much. Perhaps men must be financially very strong and have the confidence which comes from this to do the best with such soil. Some years the cost of cultivation is very high. From October, 1912, to May, 1913, there were few days on which horses could be put to work on it, and when the weather did improve, a much larger number than was available could have been used. Such experiences may suggest that on this kind of land farming should be organized on a large enough scale to permit of the utilization of machinery and implements the most expeditious in working. Where there is a demand for the production of milk, or where bullocks or flying stocks of sheep are kept, the most profitable system seems to be the cultivation of enough to provide sufficient straw and roots for the live stock, while a steady effort is made to increase the yield of grass.

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[1] *General View of the Agriculture of Oxfordshire*, 1807.

From Kirtlington near the Cherwell an irregular strip of stone-brash runs across to the borders of Buckinghamshire in a north-easterly direction, a line drawn through Bicester, Stratton Audley, and Fringford roughly dividing it from the clay. To the north of this belt again stone-brash, clay, and gravel occur intermittently to the Northamptonshire boundary, the surface soils varying to a considerable extent, one farm, or even one field, containing as many as four kinds. But there is a general change in conditions here, the ground rises gradually, the fields, mostly cultivated, seem to become a little more important and the trees a little less, corn and sheep take the place of pasture and cows, or they are found beside them, the country assumes a brighter aspect with the newly-turned red soil and the contrasts in colour furnished by the various crops: it is a relief to get away from places where the land is water-logged for many months, from a village like Piddington with its cottages tumbling down and suggesting decadence.

The country which unfolds itself at Bicester and Bucknell and all to the north is one of the most pleasant and immediately attractive in England, and it seems to contribute more to agriculture than parts farther south, but better even than it is the plateau on the east side of the valley of the Cherwell. If any one issuing from the woods at Bletchingdon, Kirtlington, or Middleton Stoney on a fine afternoon, and travelling northwards past Lower and Upper Heyford and Somerton, and through Fritwell, fails to be impressed and cheered by the scenery, by the farming, and by the western light playing round them, his senses must be dull. Some of the charm of Oxfordshire is due to the fact that we do not get very much of the same kind of scenery, but most people with an interest in country life would agree that we could do with more of this kind. Big fields, most of them well cultivated, are the rule about Kirtlington. The farms generally are large, running from four hundred to six hundred acres. Sheep are folded, cows are kept, bullocks and pigs are fattened, and heavy crops of wheat and barley are grown, while the farm buildings in most cases are good enough to facilitate this energetic style of working. On the stone-brash it may not be easy to get pasture, but as on the Chilterns the demand for milk justifies the attempt, and there seems to be no reason why the active cropping which produces fat lambs should not be used to produce milk. About Lower and Upper Heyford the cultivation is not so uniformly good, not so clean, as it might be.

Farmers who know the county regard the meadows in the valley of the Cherwell round Heyford and Somerton as ideal for the production of milk. They are rich enough to keep the cows in proper condition while milking heavily, although not so rich as to fatten them like those about Waterstock and Shabbington. In former times, when butter was made, this part had a high reputation for the quality and flavour of its output. There is this difference between milk and butter, that with the former there may be a greater departure from a high standard with less possibility of detection. North Oxfordshire farmers still tell how their mothers supplied the most searching criticism of the pasture based on the flavour of their butter. They could tell without mistake when cows were changed from one field to another. Hitherto it has been so much a question of getting a large supply of milk that less pride or interest has been taken in its quality. From Somerton milk is sent to London, and farmers grudge the amount paid in carriage. But even with this disadvantage they think that it is the most profitable part of their output.

In the central part of the district north of Bicester no cows are kept, the shallow, stone-brash soil not providing the foundation for good pasture. Corn and sheep are produced, as they are in South Oxfordshire, and conditions resemble those on the thin chalk land. At Fritwell and Souldern farms are smaller, but at Baynard's Green, Stoke Lyne, and Hethe they extend in most cases to over four hundred acres. Frequently it would appear that holdings are too large for the amount of capital available to work them. Opinions differ as to whether the standard of farming is reasonably high or not. It is, perhaps, fair and safe to assume that those who have farmed longest are most likely to know best, although at times it might be thought that they disparage their climate and soil rather much. With a thin layer of stone-brash on the limestone, they say, drought of a few weeks almost inevitably exhausts the supply of moisture, and nothing is more discouraging than to feel one's impotence when crops that have promised well thin out and deteriorate early in June. From such a reverse they never recover, even if rain and heat come later. No treatment of such land will prevent loss in these circumstances. Again, crops are subject to injury by frost well on into summer, and this is a drawback which must simply be accepted. The other view, that held by a few farmers and by inhabitants of villages who are not engaged in farming, is that cultivation is not sufficiently intensive, that with soil more fully prepared to keep crops growing, the checks sustained by drought and cold would be of a very temporary nature. Whichever view is the more correct, it is noticeable at the beginning of June that when moisture and heat together are exerting their influence to pull out the crops, the soil seems to be holding back, or it may be that the plants are too seriously crippled by drought to make new progress.

The sale of estates is giving rise to some anxiety among farmers in the north-eastern part of the county. Their farms are offered to them in the first instance, but they find difficulty in arranging for purchase. 'There is no worse landlord than borrowed money,' as they say.

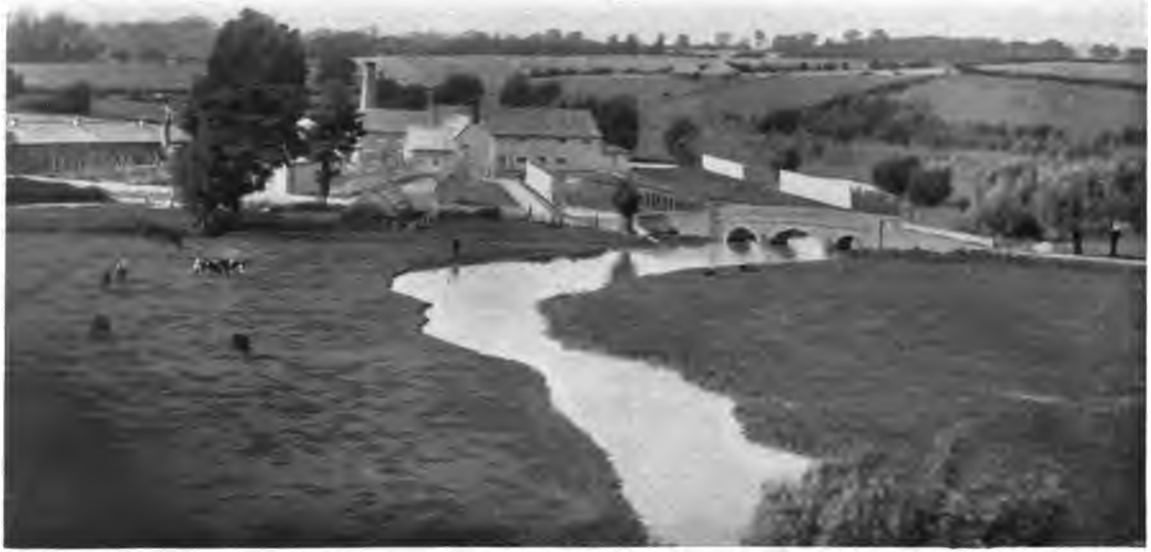
There has been less movement in agriculture, and fewer changes among farmers, in all this part of North Oxfordshire than in the south. There are more people who go back to the experience of their ancestors in giving their opinions about farming to-day. The memory of two disasters recurs in the stories told by different persons, these events, or incidents connected with them, having left the deepest impression on their minds. The cattle plague of 1865 was a severe blow to farmers who kept cows, but its effect was temporary compared with the depression which followed 1879. A proof of this is the experience of one family. Out of seventy-seven cattle on the farm in 1865, seventy-two died in less than a month, and all the labourers were employed during that time in doing nothing else than burying the dead animals at a safe depth. The loss was sweeping, but farmers must have recovered quickly, for in this case there was a young family of sixteen, and all were sent to boarding-schools. Members of that family who are now in farms wonder how it was done, for they have been unable to do the same for a smaller number of children, working ever so carefully. This instance is not singular, for another family of fourteen only a few years older, had the same comparative good fortune in their day, and now their children have received a less generous education and start in the world. Whether it is the result of this, or of other causes, farming does seem to drag considerably at present. The effects of the depression have not been thrown off even with the invasion of many farmers from other counties, from Devon as a matter of course.

In the way of equipment the work of drainage appears to be least adequately performed. As much on the stone-brash as on the clay farmers said they were working against difficulties. The deeper kind of stone-brash, tenacious when it is water-logged, is capable of being improved. This statement is sometimes made in an extreme form, one tenant, who had drained a part of his farm at his own cost, affirming that it had increased the value of the land by 10*s.* an acre. If this information is approximately accurate, it seems probable that such an increase would provide a reasonable return on the outlay, and in any case no general and lasting improvement in farming is possible until the water is removed.

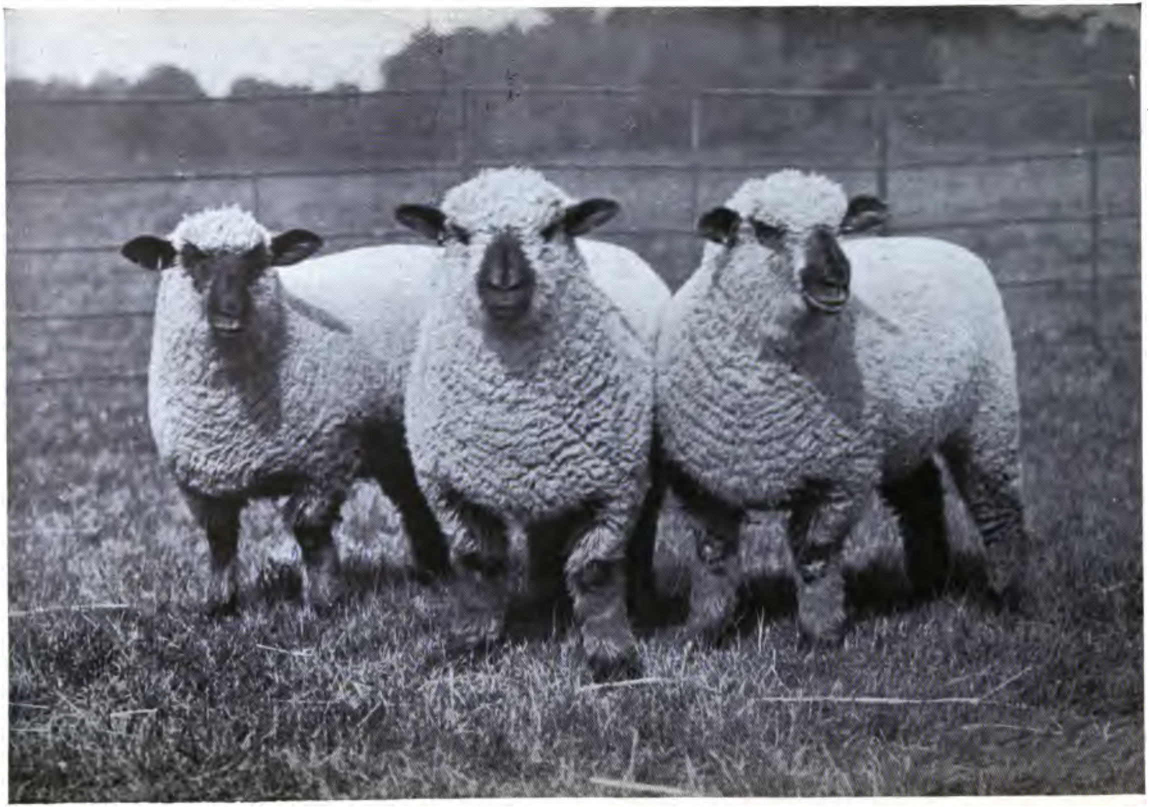
Farm buildings are better than in South Oxfordshire, although in some districts they are extremely bad. Round Otmoor cowsheds have been improvised from buildings erected for other purposes. They are inconvenient in most ways, and sanitary requirements as well as ease of working demand complete reconstruction. There are estates on which so little is done that cowsheds actually fall down, a state of affairs that is hardly creditable in view of what the milk industry is doing for this part of the county. For the feeding of bullocks some handsome buildings have been erected with the stone locally found in abundance, and the prospective development and stability of the demand for milk seem to justify an equal expenditure in respect of cowsheds.

A serious drawback, certainly not peculiar to this part, is the lack of a water-supply. To listen to the story of a farmer, who tells how in early summer he has to put on men and horses every day to cart water two and a half miles for his cattle and sheep, is to understand how little advance has been made in providing facilities for the performance of the most necessary work on the farm, it is to feel how loosely men are knit together in a long settled community for purposes of the most simple and indispensable kind. Attempts are made to sink new wells, but everything appears to be haphazard, for similar schemes must have been frequently tried without permanent success.

The local market for this part of the county is Bicester, a pretty little town which devotes itself mainly to serving the needs of people who farm and hunt. For this latter purpose it is quite important, the Bicester Hunt being one of the best in the Midlands. As a market it is inferior to Thame, but some of its amenities are more excellent.



THE WINDRUSH NEAR WITNEY



OXFORD DOWN EWE LAMBS

CHAPTER IV

SOUTH-WEST OXFORDSHIRE

THIS district is mostly under the two systems of farming which are found in other parts of the county, grazing for dairying purposes extending while cropping is being proportionately restricted. It is not easy to reach the arable part from Oxford. First of all the Thames, bringing Berkshire round to the north-west of the city in one of its windings, partly cuts off Oxford from Oxfordshire. Only a narrow strip of the county lies between its boundary on the west and the city, and this strip is mostly occupied by Port Meadow, Pixey and Oxey Meads, the cultivated part beginning to the north like the narrow end of a wedge, and slowly broadening out towards Kidlington and Begbroke. Even if the shortest road to the south-west side of the county is followed through Berkshire, meadows subject to floods and impossible of cultivation are met on the north side of Swinford Bridge.

Oxfordshire is a county of rivers. The Thames, the Windrush, and the Evenlode which drain the eastern side of the Cotswolds converge and meet here, and owing to the nature of their courses they generally flow with the smooth and slow current associated with flooding. Outside of the area which is liable to come under water there is an irregular stretch of Oxford clay running from Yarnton to Witney, and then south-west through Lew and Bampton. Most of this has also gone down to grass, the increasing demand for milk and the character of the soil working together to determine the kind of production. Heavy clay which required three or four horses for its cultivation is now undisturbed. Between the clay and the parts that flood there are areas where gravel and good loam make cultivation possible. A triangular-shaped portion extending from Eynsham to South Leigh and Stanton Harcourt shows some attractive cropping, although the gravelly nature of the soil makes it apt to burn. The country here is very level and perhaps the distances and extent appear greater than they really are. There are smaller areas of loam at Brighthampton, Aston, and Bampton, but they form an inconsiderable part of the acreage of holdings, farmers being grateful if they have one or two fields on this soil.

Between Oxford and Lechlade, therefore, the valley of the Thames is devoted more to the rearing of stock and the production of milk than to cropping. It is a beautiful country, but in the area where flooding occurs farmers refuse to accept compliments. To one who may remark the fineness of the scenery on an evening in July they reply with the bare invitation: 'Come in December.' This has reference to the floods. Yet these are not what they once were. The Thames Valley Drainage Scheme has changed things, although there is a division of opinion among farmers themselves about whether this change has been for the better or the worse. The majority take the latter view, but the division is so fine that a man does not only differ from his neighbour, but wavers between two opinions himself. 'Necessary evils' are what one farmer calls the embankments which keep the river off his fields at most times, a farmer who in the old days rode through the water up to his horse's girth in order to reach his house. This was an inconvenience, but to compensate for it the river left a deposit which enriched the meadows. In time perhaps farmers will come to prefer the more complete control of their land which draining and embanking give them.

There are several small towns in this section, but like most Oxfordshire towns they do little more than serve as market centres, dependent on agriculture. Witney, situated attractively on the Windrush at the eastern edge of the downs which rise gradually towards the Cotswolds, is an exception, with its manufacture of blankets which are famous all over the world. This fairly extensive industry is sound and contributes some life and activity to the district. Eynsham, five miles to the east, and Bampton, about the same distance to the west, are smaller towns. The former has a market. Their positions on or near the railway help them. Burford, on the other hand, has declined from its ancient greatness. Lying among the downs on the banks of the Windrush not far from the Gloucestershire boundary railway developments have passed it by. Until 1861 it had a mayor and corporation, but in that year it was deprived of its municipal rights. It has even lost its market, the business of which may have gone to Shipton-under-Wychwood, Charlbury, and Witney. Nearer Oxford Woodstock has a market, and a small industry in leather glove-making. The railways in the valleys of the Thames and Evenlode have determined the location of markets.

The road and the scenery between Witney and Burford seem to have made an extremely unfavourable impression on some travellers and writers in earlier times. Arthur Young passed this way about 1769, and says that 'the road from Witney to North Leach is, I think, the worst turnpike I ever travelled in, so bad that it is a scandal to the country . . . I travelled it with a very low opinion of all the counties and places it leads to; for if they were inhabited by people of fortune and spirit, I should think they would never suffer such a barbarous method of mending their capital road to subsist. All the country is open, dull, and very disagreeable, nor does a vigorous culture of the earth make any amends for those unpleasing circumstances; the crops were generally very poor, and mostly full of weeds.'[1] Surely it must have been the state of the road which prevented a man like Young from experiencing the exhilaration which accompanies the gentle and steady climb and the expanding view going west from Witney.

It may be interesting also to recall Cobbett's impression of the same country, and of certain conditions which prevailed at the beginning of the nineteenth century. In 1821 he travelled from Cheltenham to Oxford, and expressed views which suggest that he was not a very careful observer, or that he failed to appreciate features which attract most people. 'Soon after quitting this resort (Cheltenham)', he says, 'we proceeded on, between stone walls, over a country little better than that from Cirencester to Burlip-hill—a very poor, dull, and uninteresting country all the way to Oxford.' Again, in 1826 he rode through the Cotswolds, and refers to the appearance of several villages. 'A part,' he says, 'and perhaps a considerable part, of the decay and misery of this place (Withington) is owing to the use of machinery and to the monopolizing in the manufacture of blankets, of which fabric the town of Witney was the centre, and from which town the wool used to be sent round to, and the yarn or warp come back from, all these Cotswold villages, and quite into a part of Wiltshire. This work is all now gone. . . . There were, only a few years ago, above thirty blanket manufacturers at Witney: twenty-five of these had been swallowed up by the five that now have all the manufacture in their hands.'[1]

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[1] *Six Weeks' Tour through the Southern Counties.*

A fairly clear line separates the grazing from the corn-growing area. Between the valleys of the three rivers, two broad-backed downs rise gradually towards the west. On leaving Witney by the Cheltenham road the slopes at first fall gently in the direction of the Thames and of the Windrush, but above Minster Lovell and onwards the valley of the latter is narrow and its sides are steep. On the Thames side the rise is always gradual. Coincident with this increase in height is a change of soil from clay to stone-brash, and along with this change some very good farming occurs immediately to the west of Witney, at Curbridge and Brize Norton. Stone-brash has frequently the defect of being too shallow, and of exposing its crop too readily to drought, but given sufficient depth Oxfordshire farmers regard it as one of the best soils. None presents a more cheerful aspect. Its reddish colour when newly turned and its place as a formation beside the Oxford clay, give a favourable contrast, and the elevation which usually marks its occurrence adds to this. It lends itself to clean farming, and when farms are equipped with good houses and buildings, as several of them are at Witney and Brize Norton, no land shows itself more attractive. In this part corn-growing and the folding of sheep are general, nearly every field, except meadows close to the Windrush, being worked under the four-course system of roots, oats or barley, seeds, and wheat.

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[1] *Rural Rides*, by William Cobbett.

A few miles west of Witney, on the left side of the Cheltenham road, are the Charterville allotments and cottages. It seems rather hard to suggest any of the reasons which led Feargus O'Connor to plant this 'hideous colony of small, square-cut cottages', as Professor Oman describes it.[1] The colony had a singular origin and has had a no less remarkable career. O'Connor was member of Parliament for some Lancashire division in 1847, a year in which there was acute distress among the millworkers. The sentiment in favour of a return to agriculture being apparently strong at that time, as it has been in recent years, he took a leading part in forming the 'National Land Company'. By midsummer 1848, 70,000 people had subscribed £90,714, and one of their schemes was the purchase of 296 acres to the south of Minster Lovell. Houses were built, eighty-one families were placed in them, allotments of from two to four acres were assigned to each, and also £30 of working capital. The rent of four acres was £10 10*s.*[2] On this basis the scheme was a complete failure, the original occupiers having a hard time in their incongruous positions, and the shareholders suffering loss. After many vicissitudes matters have improved, and to-day farmers and other people in its neighbourhood speak well of the colony, testifying that it has fitted to some extent into the economy of agriculture in the county, chiefly owing to the accommodation which the cottages provide for labourers. One man, who has combined the occupations of farm labourer and allotment holder for thirty years, says the colony has in all this period never been more full of life and enterprise, nor has the land been better cultivated, than it is to-day. The holdings are now of various sizes, but generally extend to four acres, combinations having taken place. The rent is £3 10*s*. per acre, including cottage, and this the tenants think rather high.

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[1] 'The Lower Windrush Valley,' in *Oxford Magazine*, June 8, 1904, republished in *The Oxford Country* (Murray).

[2] *Three Centuries of North Oxfordshire*, by M. Sturge Henderson.

There is still considerable incongruity in the existence of this colony here, and the same remark may be applied to Carterton, a recently founded and more extensive colony to the west of Brize Norton. This place recalls the settlements met with so often in south-east Essex, with its little shanties or bungalows frequently constructed of unsubstantial material, and out of harmony with their surroundings or with any standard of elegance. Without being unduly fastidious, people may regard these places as blots on a beautiful countryside, although the mere fact that houses even of an imperfect kind have been provided to accommodate a rural population may justify the existence of the colonies.

The road keeps to the top of the downs, and the old villages, Minster Lovell, Asthall, and Swinbrook, lie in the valley to the right. To the south the country is open, and the farms are fairly large. The soil becomes poorer, and even in relation to its capacities the cultivation is less thorough. There seems to be a greater area here than in almost any other part of the county in which it is obvious that too little labour is employed to keep the crops clean. The effect of this is that an otherwise fine country is somewhat spoiled.

Burford is now a place which attracts people who choose, and are able, to live where railways and all that they bring are absent. A little over two miles to the west of the town the road passes into Gloucestershire. To the north of the Windrush a high range of downs rises. The road from Burford to Shipton-under-Wychwood leads across this range and brings travellers to a piece of scenery and a stretch of farming that are among the finest in Oxfordshire. The Evenlode comes down from the north-west to Shipton, turns there and winds round to the north-east past Ascot. The course of the river follows the sweep of the hills, which would make a majestic background for a much larger stream. One may enter this area and spend some time in it before awakening to the beauty of its features. Coming in from Charlbury or Leafield, people look at Shipton as the centre of interest, and it is only when they leave the town and work their way round above Milton, Fifield, and Idbury that they realize the extent of this vast amphitheatre. The same points remain in sight all the time, although they are seen in different aspects. The fine scenery is matched by the handsome farm-houses and buildings on some of the estates, and its fineness is due in part to the well-ordered woods, of which there are not too many.

At one time the royal forest of Wychwood covered a part of the country between Burford and Leafield which is now mostly cultivated. The property still belongs to the Crown, and on it there are some large farms. At the highest point the Post Office have erected a wireless-telegraphy station, the most conspicuous feature in the equipment of which is a miniature forest of masts which overlook everything. The soil on these downs is not so light as it is on those south of the Windrush. Clay occurs frequently on top of the oolite, and one farmer says that in a field of fifty acres he meets six different kinds of soil, an experience which renders cultivation difficult. Farming seven hundred acres of what was once forest, he thinks it was a mistake that the trees were ever grubbed, since the return on the capital expenditure has been inadequate. This view does not bear out Arthur Young's rather confident predictions. Referring to Wychwood he says: 'No person can doubt but that, to the residents who live on or near it, this fine, wild tract of country affords many agreeable circumstances which may operate, in a measure, to prevent an enclosure which ought for a thousand reasons to take place as soon as possible. . . . Nor is it in the view of productiveness alone that such an enclosure is to be wished: the morals of the whole surrounding country demand it imperiously. The vicinity is filled with poachers, deer-stealers, thieves and pilferers of every kind, . . . and Oxford gaol would be uninhabited, were it not for this fertile source of crimes.'[1] It may be unfortunate, but the enclosure of Wychwood seems neither to have filled the pockets of landlords and farmers nor to have emptied Oxford gaol.

Leafield, a village which has grown chiefly since the forest was cleared, has a good reputation for its agricultural labourers. Cornbury Park, between it and the Evenlode, preserves a part of the forest, sufficient to show how well trees can grow. East of Leafield the downs fall gradually. This is one of the least interesting parts of the county, being distinguished by few specimens of good farming and by no picturesque features. The soil is not good; farms do not seem to be well laid out, equipped, or managed; small holdings intervene at places, but they share the somewhat untidy appearance and lack of character which mark most of the area. At Hailey and North Leigh the Oxford clay begins and runs by Hanborough and Yarnton to the Cherwell.

At Charlbury and on the north side of the Evenlode, following a line through Wootton and Tackley, the country is less broken with woods. Sharp hills which become more common farther north begin here. Stonesfield—famous for the stone slates which cover so many Oxfordshire churches and houses—Woodstock, and Wootton all stand on steep inclines. At Bladon, Campsfield, Hordley, Begbroke, and Tackley active arable farming is found on large holdings.

Turning now to the system of farming pursued in this section of the county, there are developments worth noting. In response to the demand for milk from London an awakening has taken place in every part except on the higher parts remote from the railway lines to Fairford and Worcester. All along the Thames valley changes have been made and are still going on. In the Evenlode valley the same process has commenced more recently. The depression sent farms on the clay down to grass, in many cases to rather unproductive uses, and these are being gradually brought round to yield a little more either for grazing or hay. In this connexion the experiments carried out by the late Mr. James Mason of Eynsham Hall are of interest. It was about 1882, when farmers were giving up their holdings owing to losses, that Mr. Mason took 1,200 acres in hand in addition to 600 which he previously farmed. Of this 800 acres were ploughed. The experiments were conducted simultaneously on a laboratory scale and on the farms, and their main object as it defined itself during their progress, and so far as it is of economic value, was to ascertain the possibility of improving poor Oxford clay by employing a rotation of nitrogen-fixing crops and nitrogen-consuming crops, so that the former would attract to and leave in the soil an increasing surplus of nitrogen for the latter. Deep cultivation and the weathering of the subsoil accompanied this rotation to see if the dormant stores of phosphoric acid and potash might be released and made available as plant food, the whole system being designed to save expense in the purchase or production of manures at a time when prices were low. Beans, red clover, and lucerne were used as nitrogen collectors, and the last, which was a new crop on this kind of soil, proved itself effective for the purposes in view. If there was disappointment with the financial result, it is reasonable to conclude that the failure was due to the subordination of this side.[1]

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[1] *General View of the Agriculture of Oxfordshire.*

At that time the demand for milk had not made itself felt in this part. Now farmers one after another are turning to its production. The most usual size of dairy herds is from thirty-five to forty cows. After some experience the number is occasionally increased, a farmer beginning with forty, altering the cultivation and grazing of his farm to provide for seventy. Little accidents, such as one or two unprofitable years in feeding bullocks, may turn a farmer to milk production, and he does not often abandon it. In two or three parts of this district owners of herds have had to combat Johne's disease in their cows. This insidious, wasting disease seems to be caught on certain pastures in which the microbes have become fixed. Where this is the case it is impossible for the farmers to rear their heifers, and generally they adopt the method of buying cows after their second or third calves, when their constitutions are capable of resisting attack.

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[1] A full description of this experiment, by Mr. A. D. Hall, appeared in the *Journal of the Royal Agricultural Society*, 1904.

The growth of the business of milk production is illustrated in the most striking manner in the case of one farm which is noted for other achievements. Kelmscott, at the extreme south-west end of the county, is known to the world at large as the village where William Morris lived, but to agriculturists it is known as the farm where some of the finest Dairy Shorthorns in the world have been reared and some of the best Oxford Downs. Few herds or flocks have contributed so largely and for such a long time to the improvement of these breeds in this country and abroad, and the enterprise has a special value as an example of successful farming, because whatever has been accomplished is due to no exceptional advantages either in the gifts of fortune or in the soil, which is generally regarded as unequal and inferior to some in its neighbourhood.

In 1873 a Gloucestershire farmer, whose principal holding was near Fairford, placed one of his sons in Kelmscott, giving him an equipment necessary to start on an ordinary career, and in addition a pedigree flock of Oxford Downs to stimulate any ambition which he might possess. The original holding was 600 acres, but others have been added from time to time until now the whole embraces about 2,300 acres. Expansion became necessary chiefly owing to the successful development of stock breeding and milk production. The distribution of this area under the various crops in 1914 is as follows. Wheat occupies 206 acres, barley 209, oats 90, beans 32, rye 3½, potatoes 1, swedes and turnips 111, mangolds 39, cabbages 10, vetches 66, lucerne 27, maize 6, seeds (for mowing) 117, seeds (for grazing) 82, grass (for mowing) 489, grass (for grazing) 642. The rent is £2,000 and wages are £4,000. The cost of feeding-stuffs, including that of oats and beans grown on the farm and of weathered barley unfit for the brewer's use, is between £4,000 and £5,000. About £100 is spent on superphosphates each year, and the same amount on basic slag, with one or two tons of nitrate of soda.

The live stock consists of 506 cattle, 196 of them cows in milk, the remainder being heifers, calves, and a few bulls; of 1,667 sheep, 739 of them breeding ewes; of 117 horses, 75 working, 35 unbroken, 3 stallions, and 4 hunters.

In 1878 the farmer laid the foundation of his Shorthorn herd by purchasing some cows. Non-pedigree as well as pedigree animals were bought, the former being chosen for their size, sound constitution, and milking capacity. With pure bred bulls their offspring were graded up until in the fourth generation they were eligible for the herd-book. The output of the herd consists of young bulls and heifers sold to most parts of the world, of cows sold whenever a price considered sufficient is obtained, and of milk sent to London. In addition fifty cows whose milking days are over are annually fattened and sold off. The change in the proportions of revenue derived from these different sources is worth noting. At first, and for a considerable time, milk accounted for the greater part. The relations have gradually altered, however, and of the returns now three-fifths come from the sale of stock and two-fifths from the sale of milk. Therefore, although the value of the animals for breeding purposes depends chiefly on their capacity to produce milk, their value has increased in greater proportion than the value of the milk itself which they yield. Both cow and bull calves are weaned about six days old. They are earmarked, and a card is hung up in the weaning-pen giving the rations to be fed. A cream equivalent is used, and the calves have bran, crushed oats, and linseed cake as soon as they will feed, and as much hay as they like.

The history of Dairy Shorthorns has been a record of such developments. There was opposition to overcome before they were recognized as a distinct class. The old view was that if Shorthorns gave a fair quantity of milk it was satisfactory, but that they should produce plenty of beef was an indispensable requirement. With the Dairy Shorthorns it is different. The theory is that they must be good milkers. This is the first consideration, and next to it comes the question of how they are adapted for fattening, which only becomes an end in itself when their unprofitableness as milkers has been proved, although it is always regarded as an end. This is important when one considers that most of the bull calves in an ordinary non-pedigree Shorthorn Dairy herd are reared as steers for fattening.

The building up of this herd for pedigree and show purposes and the extension of the milk business have proceeded simultaneously. Farming is in some respects a singular industry. Its ostentatious side, for example, in a good sense of the word, is remarkably well developed so far as stock is concerned. No one is so exalted that he will not be a farmer to the extent of investing his capital in horses, cattle, sheep, and pigs which may compete for the prizes at the Royal Show, or of going among them once in a while to see how they thrive; but this comparatively rare blossom does not always grow on the tree of unassisted agriculture. Every herd of cows, by what it produces, does not meet the cost of sending out the show animals which represent it; but this one at Kelmscott does. Special steps are taken to develop the trade in milk, the latest being the opening of a dairy in the west end of London through which milk is supplied in air-tight bottles direct from the farm. This business requires a high standard of equipment on the farm, and facilities for washing and sterilizing utensils are of the most modern kind. The milk is weighed for milk-record purposes, cooled to forty-five degrees by the circulation of iced water through tubes over which it flows, and bottled within a few minutes after being taken from the cows. One might expect that milking machines would be used in the case of so large a herd, but the cows are considered too valuable for this.

A similar spirit of enterprise has been shown in the management of the Oxford Downs. These have been kept at show standard, an achievement which involves a vast amount of labour. The chief output from the flock consists of shearling rams and ram lambs. Of these about three hundred are sold every year. Half of them are sent to Scotland, to Kelso and Edinburgh, where during the last fifteen years a demand has arisen. The rest are sold in markets nearer home—Oxford, Cirencester, and Northampton—and to merchants who come from the Colonies and foreign countries.

For an ambition which was not satisfied with success in breeding cattle and sheep there was something still to be attempted with horses. To understand what has taken place here it should be remembered that farmers without large outside resources must do very daring things in attaining their object. They must secure the very best, and be prepared to give a price for it which may be beyond their ability to pay in cash. They are thus 'farming up to their last shilling'. In this case more has been spent in the purchase of sires for the stud than on sires for the herd and flock combined, while the success of the stud has so far scarcely been commensurate with that attained in these departments. However, that the purchase of first-class stud horses has been good policy and a sound investment is evident in the steady and marked improvement of the mares and young stock in what is a comparatively short time. For it was not until 1901 that the first stallion was purchased at the Dunsmore sale and Shire breeding at Kelmscott extensively carried on.

There is one feature in the management of this farm worthy of attention. The different holdings of which it consists are not contiguous, being situated in the four counties, Oxfordshire, Berkshire, Gloucestershire, and Wiltshire. Of seven sons three are on the farm, all of them being in partnership with their father, and each being responsible for one of the different departments mentioned. This arrangement is not usual among farmers, as sons generally leave and enter separate holdings. There is abundant scope in the 2,000 acres for each member of the family to go out and establish himself, but whether for deliberate reasons or otherwise this course has not been taken. The whole of this area is under one management which, in its main principles, may be that of the young partners' grandfather, modified by all that their father's experience has suggested as well as by the most modern ideas to which they themselves have been susceptible.

The reason for devoting so much space to a description of this holding is because it illustrates the method of concentrating a common management on a large area. This method secures continuity of policy and seems to prevent an indefinite loss. Under the most favourable circumstances there must be times when a man's enthusiasm and energy flag, when his powers of observing and appreciating new movements are less alert, and there are times when young men lose ground in gaining experience. Both of these detrimental results are lessened in the case of such a partnership. The need for small holdings has been recognized, in some places with happy results, in others with consequences of a more doubtful kind; but in the interests of agriculture as a whole there seems to be room for more very large holdings placed under a system of management to which several minds contribute. There may be advantages in having independent, self-reliant men farming small tracts, but more intelligence and more energy will be devoted to agriculture where a number of men are associated together as at Kelmscott.

In its extent, and in the standard of stock kept, this farm is singular, but its mixture of arable, dairy, and stock largely represents the style of farming between Oxford and Lechlade. The development of the milk trade has had an influence in more directions than one. In some dairy farms no calves are weaned, and there are farmers, as one would expect, who prefer to continue their old practice of rearing heifers for which they now get prices higher perhaps than ever they did. Thus, while some men may drive their milk five or seven miles to Witney or Faringdon, others, much nearer stations, but with no inclination for dairying itself, prosper by raising the stock which fills up the herds. On the heavier soils about North Leigh, Witney, and Standlake a small proportion of the land is ploughed, and on four hundred acres nine cows may be kept to rear about sixty calves. It would seem at times that these complementary arrangements by which one farmer supplies the needs of another arise from personal tastes as much as from financial considerations or suitability of soil, the question of making profits being by no means supreme. A farmer who feeds off large numbers of bullocks and sheep never rears one, because he prefers a simple method of farming, which cannot always be the most profitable.

At Black Bourton there is a holding which has preserved one form of the old Cotswold style of farming for the greater part of a century. There are 647 acres, all arable with the exception of a small piece near the house. The principal sources of income are barley, Oxford Down sheep, and poultry, the last a comparatively recent addition to the live stock. There is a pedigree flock of 250 ewes, and not the least admirable feature of the management is the extraordinary attention which they receive. An unusually large extent of sainfoin is grown for them, one seeding lasting for four or five years. The pens for lambing are like the best in other parts of the county, but an exceptional arrangement for affording the lambs shelter from the sun during spring and summer were the stacks of barley straw placed at intervals in the fields where they graze. Ram lambs constitute the main part of the output from the flock, from 100 to 150 being sold each year. The poultry form a considerable part of the stock, between 900 and 1,000 being kept. They have one large field to themselves, while they are also distributed in small lots over the farm. This simple, concentrated system of farming has been successful, the sheep themselves having repaid the attention devoted to them even during the worst times.

While this part of the county contains some of the best flocks of Oxford Downs, a change has taken place in the kind of sheep kept on many places, and therefore in the manner of handling them. On farms where the soils are mixed heavy and light, and even on the downs where the light predominate, there is frequently no flock. Cross-bred lambs are bought in autumn in the Scottish or other northern markets, and sold off fat in the following spring or summer. This system involves less expenditure in capital and labour, and for a few years has been profitable.

Corn-growing with the feeding of sheep and bullocks is the general style of farming in the higher, open country between Witney, Burford, and Shipton-under-Wychwood. Owing to the kinds of soil and to the fact that this part is one of the least well served with means of transport, this seems to be the most appropriate arrangement. There has been an improvement in the cultivation during recent years. Near the Gloucestershire boundary about Milton and Idbury butter-making, a more ancient form of dairying than the sale of milk, holds its ground. Across the Evenlode, in the north-west section of the county, this industry is very general.

Lower down the Evenlode valley, at Finstock, Fawler, and Stonesfield, potato-growing has been introduced, and extends slowly against the views of some farmers. Potatoes as a crop devour much more plant food in the soil than any crops to which Oxfordshire farmers had been accustomed. They left it so poor that the poverty showed itself clearly in the crops of the following season. Farmers looked on this as a vice, and as an irremediable one, because it did not occur to them that they might be able to replace in the soil plant food equal in amount and efficiency to that which the potatoes had abstracted, and still find the enterprise profitable. It was interesting for more reasons than one to meet a good farmer who stated his attitude in these words: 'Show me a field of corn in which potatoes grew last year, no matter in what order or areas they grew, and I shall trace the places where they were to an inch.' In spite of this the experiment makes headway as far as Woodstock, although the acreage under this crop on no one farm is equal to that at Clifton Hampden.

At Blenheim Park a beginning has been made with a large experiment in farming, comparable in some respects with that carried on at Kelmscott. In the Park itself there are now some 500 acres under the plough, besides 800 acres pasture which, under treatment with basic slag and heavy stocking, has been greatly improved. The arable has turned out to be some of the best stonebrash soil in the county and has been made to yield, up to the present, crops considerably above the average. Several other farms on the estate have also been taken in hand, and by Michaelmas 1916 there will be altogether 5,000 acres under the scheme. There is one central manager over the whole, with bailiffs on the outlying farms. The enterprise differs probably in a fundamental respect from most of those undertaken by landlords in the past. The first object is financial—to make the enterprise yield an adequate return on the capital invested. It is hoped to obtain the maximum production from the acreage of land in hand. This is considered to be the foundation on which any improvement in the standard of agriculture must rest. The difficulty of getting farms contiguous or close to each other has not been considered serious, and several of the farms in hand are situated at wide intervals from each other. Experiences of an entirely new kind may be encountered in the development of this enterprise. It differs from that at Kelmscott. There an extension of the holding has followed years of experience and an increase of capital derived from farming: here a large area has been taken over, and abundance of capital put into the scheme, within a few years. There the management has been kept undivided: here it has been partly divided; and the results in the two cases will no doubt be watched with interest.

To the south and east of Woodstock, by Bladon, Campsfield, and Begbroke, the country is open, the belt of stonebrash running through this part in a north-easterly direction is moderately wide, farms extend from 400 to 600 acres, and the fields are large. These conditions are favourable to farmers, and some of the best farming in the county is found here.

This is not yet the place to take a comparative view of agriculture in the different sections of the county, but in one respect this part repeatedly presented a more favourable appearance than the others. Over a larger proportion of its area estate management is better. Farm-houses and buildings are good, tenants seem to have had more consideration in their difficulties; and these things have had an appreciable effect on the standard of farming. The Crown, the Colleges, and the Ecclesiastical Commissioners own most of the land, and while farmers pay tribute to their policy, the equipment of the holdings is a sufficient evidence of its excellence. There are also private estates where this work of permanent improvements is well done, and consequently where tenants have a constant incentive to good farming.

CHAPTER V

NORTH-WEST OXFORDSHIRE

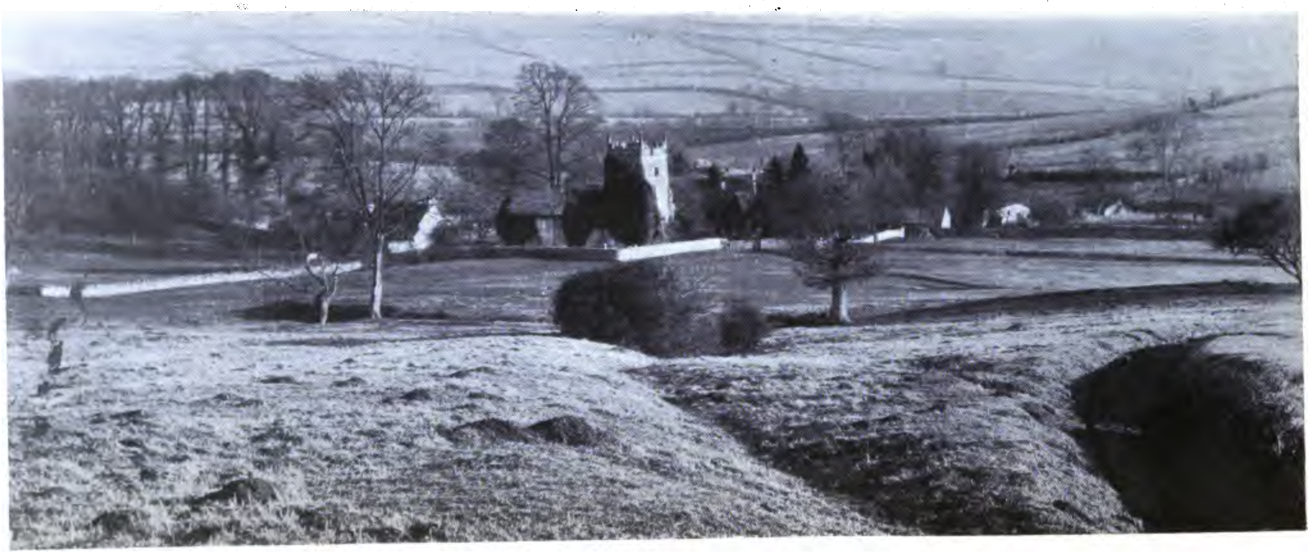
A FEW weeks before the outbreak of war, two young Germans, studying agriculture in England, were travelling in the train from Oxford to Kelmscott, where they were to reside as pupils. Having gone down before on horseback, they discussed the various places, and expressed opinions which showed they had formed a comparative impression about farming in England and Germany. They had been to the Royal Show at Shrewsbury, and Englishmen, they thought, easily excelled Germans in breeding all kinds of live stock. On the other hand, they believed the Germans were superior in growing corn. This view may have been derived partly from preconceptions, but it may just as well have been gained from what they had seen between Oxford and Kelmscott. In Oxfordshire slightly less than one quarter of the total area is under corn, and as in the rest of England this does not form a wide unbroken stretch, but is made up frequently of small portions of different farms. These do not impress travellers like the great plains in Germany with their light soil so often under rather light rye, but if the test of quality and weight is adopted instead of area, a different judgement will be given.

The corn fields that lie on either side of the road from Oxford to Banbury bear testimony to the ability of Oxfordshire farmers to grow corn. In this part it is an object of solicitude among the farmers to get straw of sufficient stiffness to support the grain, and to put plenty of potash in the soil, since crops frequently grow almost too well, and in consequence lodge and go to waste. Corn-growing, however, is more uniformly confined to a small proportion of the area of different farms than in other parts of the county.

The transition which takes place in the crops grown in this district as compared with those in the south-west follows a marked change in the configuration of the country as well as changes in soil and in markets. Approaching from the south at Tackley one might believe it to be the beginning of an extensive plateau given up to corn, but going on to the north one might leave the county at Claydon with the impression that it is the centre of a hilly, stock-raising country. In the four parishes, Stonesfield, Wootton, Glympton, and Kiddington, which lie on the borders of the two areas, 37 % of the land under crops and grass is in corn; in the five parishes, Mollington, Bourton, Wardington, Cropredy, and Claydon, at the extreme north, only 16 % is in corn. The north-west corner of Oxfordshire, like the south-east, is occupied almost wholly by hills, but not by a regular range like the Chilterns. There are no wide valleys, and no great level stretches. The district is contained by the Cherwell on the east, the Evenlode on the south-west, and partly on the west by the valley which runs from Kingham past Chipping Norton. Along the west bank of the Cherwell there runs a moderately wide strip of meadows. Behind them to the west the ground rises to a height of 400 or 500 feet. This high ground is fairly level towards the south, but is intersected by the Glyme, Dorn, and other streams which have cut deep valleys through it. Farther north, streams like the Swere and Sor run from west to east into the Cherwell. Their valleys are narrow, steep and uneven, the water in wearing down the ironstone subsoil having left ridges and terraces. These are too abrupt and rough to plough, and remain under grass.

The more regular surface in the south is generally accompanied by the lighter soils. The lower lias clay in the valleys of the Cherwell and Evenlode makes good meadows, while the shallow brash soils about Great Tew and Heythrop are of little value. The soil which is regarded as most useful, and for which the highest rents are paid, is a red loam which rests on the top of ironstone. It occupies a considerable

TAYNTON AND COTSWOLDS



LITTLE ROLLRIGHT

area between Hook Norton, Deddington, and the north of the county. The ironstone subsoil makes it behave strangely at times, the highest fields on some farms, if they are level, being the most liable to flood after heavy rain, since the water lodges on the impervious ironstone and the surface is submerged for days after a storm. While farms on the cornbrash and clay farther south are let from 18*s.* to 24*s.* per acre, in the neighbourhood of Banbury and North Newington they are let from 24*s.* to 33*s.* The last figure is a high rent for Oxfordshire, and it is paid for farms most of the area of which is under grass.

In addition to the configuration and soil of the district, market conditions contribute to give the farming a distinct character. The normal Oxfordshire conditions are modified here, because this district by its proximity to several other counties participates in their systems. Between the valley of the Thames and the Vale of Evesham there is a large tract of country which is not well served by railways. It lies about the borders of Oxfordshire, Warwickshire, and Worcestershire. The new influences which affect places close to main lines cannot penetrate here, and consequently agriculture retains its old character longer. Places like Epwell, Shutford, Balscote, Shenington, Alkerton, and Hornton are too far distant from Banbury, and the roads are too hilly, to permit of the profitable carriage of large quantities of feeding-stuffs and manures to the farms, or of the frequent sending away of produce. Bullocks are not generally fattened in these districts, but are sent as stores in autumn to Banbury market, where Norfolk farmers come to buy them. It is not to be assumed, however, that agriculture is, or ever was, stagnant in these parts. Landowners in the old days, no less than now, made experiments which had some results beyond financial loss. Mrs. Sturge Henderson tells us that 'the first cultivation of sainfoin in England was by John Hastings at Daylesford in 1650'.[1] Daylesford is just across the boundary in Worcestershire, a few miles north-west of Kingham. John Hastings was an ancestor of

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[1] *Three Centuries of North Oxfordshire.*

Warren Hastings, and the latter bought back the estate which had passed from his family. Sainfoin, it appears, came to England from Holland, the Dutch at that time leading in experiments with grasses and roots. Some day, perhaps, more milk will be sent from this part to London, but at present it sends the least of any district. Butter-making, the form of dairying which may have been common a hundred years ago, still flourishes, and for this commodity the chief market is Birmingham. It is an industry which involves a less exacting method of working than the production of milk. The herds kept are comparatively small, fourteen to twenty cows being the most usual numbers. The cream is churned twice a week.

This branch of farming, however, constitutes but a small part of the system, for farms are large, running from 300 to 600 acres. Many of them have attained this size by the process of grouping two or more together. There are a few holdings larger than this, but farms over a thousand acres are less common than in other sections. The persistence of butter-making may be taken as indicating the resistance to change characteristic of the district, but by the same reasoning it may be regarded as a tribute to the soundness of the whole system of which it forms a part. Calves are weaned, bullocks are fattened, and sheep are generally kept; some of the best Oxford Down flocks in the country are found here, those at Adderbury and Heythrop being well known. For sheep, as much as for cows, it is necessary that roots should be grown.

The example of one holding may be given to show on what a broad and representative basis agriculture rests—has rested indeed for sixty years, since the farm has been held by the same family for that period. This holding lies between Banbury and the northern boundary. The total area is 425 acres. Of this, 154 acres are ploughed. The rotation of crops is different from that pursued in the south, less green food being grown for the sheep. The following seven-course system is used: (1) bare fallows or roots grown with artificial manure only, and eaten off by sheep, (2) wheat,

(3) oats or barley, (4) clover, (5) wheat, (6) beans grown with farm-yard manure, (7) wheat. Twenty-two acres are taken in each break, so that 110 acres are always under corn and beans, or a little more than two-thirds of what is ploughed, and about one-fifth of the total area. Some farmers with the same system apply part of the farm-yard manure to the roots, but the method of distribution adopted in this instance has been successful, the folding of sheep being regarded as sufficient for the crops from two to five, a period of four years, while the remaining three crops get the benefit of the manure applied to the beans, the roots receiving artificials in addition.

If the live stock is considered, this farm furnishes an interesting example of management. There are sixteen cows from the milk of which butter is made, a herd of pigs to consume the surplus, heifers and bullocks, a flock of Oxford Downs, and poultry in large numbers. These, with the wheat and barley grown, provide the output from the farm, and it will be seen that they represent a variety of sources from which the income is drawn. The revenue comes from seven or eight forms of produce, and only in exceptionally adverse times will the prices of all go down simultaneously. A considerable amount of capital as well as energetic and watchful management is required to carry on this varied enterprise, but given these it proves a stable system. The only alternative which challenges it on this ground in the judgement of farmers is milk production.

It is only a minority of farms that are run on this comprehensive basis. Butter drops out of the produce in most cases, and pigs in many. Oxford Downs are dispensed with, and consequently a smaller area is under the plough, while more attention is given to rearing heifers and fattening bullocks. It is essentially a stock-raising country, but there is nothing stereotyped in the methods of handling stock, the permutations and combinations among these being apparently as numerous as the farmers themselves. Thus on one farm of 600 acres, seven cows are kept to wean calves which are reared as heifers and bullocks, and a large flock of Oxford

Downs is folded on clover and roots; on a neighbouring farm of 500 acres no calves are weaned but one hundred bullocks are purchased and fed off every year, a flock of Clun ewes is kept on the grass, and from them cross lambs are taken. Hampshire Down lambs are bought in autumn to eat the roots. Both cattle and sheep, therefore, are very much of a flying stock here. The purchase of 'foreign' sheep from the west country and from Scotland has become common, and there is an impression among owners of regular flocks that the men who deal in the 'foreigners' get more financial satisfaction. But the two systems run together, representatives of old Oxfordshire families adhering to the flocks, and those who have come recently from other counties generally buying and selling. There is something speculative in the latter system which perhaps renders the tenure of those who adopt it precarious, but one can hardly be confident in drawing this conclusion, even if the combination of dealing and farming does seem in some cases to be incompatible with the highest achievement in the latter.

Shorthorns are the common breed kept both for milk and feeding, but for the latter purpose Aberdeen-Angus are sometimes preferred. An experiment in crossing Dairy Shorthorns with the Hereford may be mentioned for the instruction of any inexperienced person who may contemplate anything of the kind. The first crosses from a Hereford bull are successful, giving a normal supply of milk, but the offspring of these crosses only give a fraction of the average Shorthorn. The experiment was made with a small herd, where butter is the produce, but it was a costly one, the full result only appearing after the heifers had calves, or even after second calves. In this case the farmer had committed himself to three generations of the unprofitable breed before he received any suggestion of the mistake, and the loss has not yet been repaired.

There is one holding immediately to the north of Banbury on which the system of farming, although not typical, is extremely good. It extends to 420 acres, of which 340 are pasture and 80 arable. The pasture is on the lower lias soil, a strong clay, near the river, and the arable is on red loam on the highest part of the farm. The chief sources of revenue are fat bullocks, from 180 to 200 being sold every year. A flock of Oxford Down ewes is kept, with an Oxford and a Radnor ram, the lambs being sold fat. Although the grass may be good enough to finish bullocks, they always get cake, and whether on the roots or grass, the sheep get linseed cake and pease. This system of farming might be adopted with advantage even where farms are wholly on the clay. The task of ploughing the whole area of such farms is very arduous, but there are alternatives between this practice and that of keeping them all under grass. In this case there is no doubt that the comparatively small proportion of arable derives benefit from manure made by the cattle largely kept on the grass, and that the grass benefits in turn from the style of feeding which is made possible by the production of roots. Both crops and grass are excellent here. In 1914 the yield of wheat was 6¾ quarters per acre, and all the other crops were uniformly good. All the bullocks are bought about two years old, and an interesting practice is the keeping of a record of their origin and of the history of each bullock from the time it is bought until it is sold. These records are used to determine the best herds from which to buy, and the proper treatment of the bullocks while being fed. Similar records are kept with regard to the sources from which seed corn comes, the treatment of the crops, and their yield. The management of this farm generally is instructive.

While most of the pasture and crops in this section are used to feed sheep and cattle other than cows, a few breaches of a decisive kind have been made in the system by the establishment of the milk business. This has taken place only close to the main railway lines in the valleys of the Cherwell and Evenlode. However willing farmers about Kiddington and Sandford might be to engage in producing milk, the distance of seven miles by a hilly road to Heyford is an obstacle to the extension of the enterprise. It is to the north and south of Banbury that it has taken firmest hold.

There, whether the market is in that town or in London, some landlords and farmers have met the demand in an adequate way, good cowsheds have been erected, water has been laid on, and milking-machines have been installed. This last improvement seems to have been introduced by farmers from a western country. Farmers with large herds here prefer the machine to the hand in every respect, the udders of cows being less apt to go wrong since it has been in use. The production of milk here, although not on an extensive scale, is managed in an attractive and efficient manner.

There has been a similar movement in the Evenlode valley, but the methods seem to be less advanced. It was said that in a few cases farmers had taken up the business and then abandoned it, after landlords had adapted buildings for the purpose. This was given as a reason to explain why the latter had done so little in that direction. Owing to the difficulty of keeping their milkers some men had given up cows. Where trouble arises between employers and employed, the former feel themselves helpless with a considerable herd to milk, and refuse to put themselves at the mercy of their men, a disability which should be lessened by the use of machines. The complaint, however, is not confined to this part, and in spite of such obstacles the movement gains ground.

Two views of agriculture as it is practised here are held by farmers, the one rather gloomy and the other hopeful. Veterans who have spent most of their lives in farming speak regretfully of what they call its decadence. They select districts such as those about Chipping Norton and Great Rollright, and say that they remember when things were better done. Their remarks generally have reference to crops, and the standard by which they judge these is taken from the state of affairs before the depression. During recent years they have seen men make unsuccessful efforts to pull round small farms, and they themselves have been given one or more of these farms in addition to their original ones. This experience has influenced their estimate of farming. Their work has been to clean land which has become very foul during the lean years. In order that a man should do this thoroughly he requires to be energetic, and the rent should be low. When these conditions obtain, success is very general. As opposed to the view of the older men on whose shoulders the task of salving agriculture has so largely fallen, the majority of the younger men, of those who have come to the county during the last fifteen years, believe that an improvement has taken place. This opinion may be valuable, since it probably reflects the financial experience of the men who hold it.

If an outside judgement were sought, it would probably be to the effect that the arable farming is well done, but in view of the fact that more of this country is under grass than under the plough, the judgement applies to the less important part. As in other districts, agriculture has done little for the grazing, or for the meadows from which hay is taken. It has become a threadbare maxim among farmers that, in the case of corn and roots, they cannot expect to get much from the land if they give it nothing. When a man puts his hand to the plough, making the soil a red background to show up weeds, spending money on labour, seed, and in rent, he feels bound to attain a certain standard in cleanness and in yield. Such crops bear commendation or reproach on their faces as it were, making the farmer proud or putting him to shame. There is more chance of shortcomings escaping notice in the case of pasture, and there is a fear that advantage is taken of this, and that a less definite standard is used. If a careful assessment were made of the production from the separate acres on most farms, it would be found that about half of them are giving the greater part of the rent, not because they are superior, but because the others have not been exercised as they should have been. One farmer with 500 acres and an increasing herd of cows finds that the fields most heavily stocked have improved greatly in the amount and quality of the grass, and he looks forward, too indefinitely perhaps, to the time when he shall have made a similar improvement in all the fields sloping to the Cherwell above the level of flooding. There is clay in the valleys of all the rivers which is a suitable soil for treatment with basic slag, and there is no part of the county where expenditure on labour and manure would more certainly repay itself.

The question of drainage arises in relation to this. It seems a discouraging experience for a farmer to pay 30*s.* an acre for 400 or 500 acres when a considerable part of this lies waterlogged. Improvement in pasture cannot proceed until this fundamental operation has been carried out. Most of the land being of a strong nature requires drainage and responds to it. There is sufficient fall to make it possible, and the advantage is seen in the contrast between adjoining areas, the one drained and the other not. On many farms there are old drains, which fail to serve their purpose, either because they are too deep, or because the soil above them has become too little pervious to permit of the water getting through. In one case a farmer without touching the pipes dug out the soil from the top and turned it back again loosely: the result was satisfactory, the pipes drawing the water from the surface soil again.

While the presence of too much water in the soil interferes with cultivation and deteriorates the pasture, the lack of a regular supply for stock and dairy purposes handicaps many farmers. Where villages and farms stand on hills, it is a costly undertaking for individuals to sink wells, and there are many cases in which development is held in check by the absence of reasonable facilities. There has been no systematic scheme for providing water, but here and there, as in one part of the Evenlode valley, a public-spirited individual has taken the initiative, and afterwards the village or parish has assumed the burden as a common one. This intermittent performance of a necessary service is unsatisfactory, the value of these small, local enterprises being chiefly by way of example.

Another part of the permanent equipment of farms mentioned as insufficient were the private roads. On large farms the houses are frequently a long distance from the public road, and it is surprising how patient farmers have been in putting up with tracks through the fields, the only foundation or stiffening of which is some of the local limestone that crumbles on exposure to weather and makes heavy work for horses and wagons. There are a few cases where a more active system of farming would be adopted if an improvement were made in this matter. There is one farm the private road to which is two-thirds of a mile. It is only about two and a half miles from a station on the main line, and milk would be produced if it were not for the fact that the private road is so rough that it would at times be liable to become butter in its passage. These conditions prevail in other parts of the county, but they are relatively more of a handicap here, since the possibilities of production are greater. The custom of having all the farm-houses and buildings in the villages is an advantage compared with this when the amount of feeding-stuffs to be carted home is considerable.

The farm-houses and buildings are less uniformly good here than in the south-west. There seem to be a larger number of small estates, and on these generally less has been spent during recent years. Some complaints were made about labourers' cottages, their positions as much as their scarcity being considered unsatisfactory. The situation of buildings is an important matter in the economic working of the farm. In some cases it is a common arrangement to have the cottages in the village or elsewhere from half a mile to a mile away from the farm-house and buildings even if short cuts are taken through the fields. Many farmers find this inconvenient where men turn out before breakfast to attend cows or horses. The whole question of the relative position of the different buildings needs careful consideration from the point of view of preserving the amenity of the house, and of securing the comfort of the live stock, of preventing waste in material, and of facilitating the management of the holding. Each of these aspects arises in every district. On some estates in this part Dutch barns, of which there are few in the county, have been erected, although they still seem to be less appreciated than in the north.

Outside of agriculture there are no considerable industries. The quarrying of ironstone at Hook Norton and Adderbury is the most extensive form of mineral development in the county. It is still growing, but the few furnaces have not altered the character of the scenery, or polluted the atmosphere, any more than the small number of factories have done in Witney. Banbury and Chipping Norton depend chiefly on agriculture. In the former, which is the next largest town to Oxford, agricultural implements are made; it is an important railway centre, and has a market which is good in a general way without being noted for any special line. It is a tribute to the attractions of the place that, in the midst of what is almost purely a farming country, it has a population of over thirteen thousand. Chipping Norton, a town in which there is a good deal of activity, stands on the west side of the county, high up on the south-east side of a deep valley. Woollen cloths and leather gloves are manufactured here, industries which were perhaps founded when their raw material was drawn wholly from the flocks and herds on the neighbouring hills. There is a market in the town, and a few miles to the south-west is Kingham, a small place well known for the sales of Shorthorns which are held there. Its convenient situation at the railway junction is the basis of its success in this respect. A market, which is becoming more important, is held at Charlbury, these small centres on main lines gaining ground, partly perhaps at the expense of neighbours, and partly because an increasing amount of stock is kept in the county.

There are a few villages which show signs of decadence. Houses are vacant, or in a state of dilapidation, as if the life now there were insufficient to fill and keep in repair the dwellings which contained it in earlier times. Such places as Lidstone and Milcombe are examples. In the case of the former one wonders why such an awkward site as the steep sides of the Glyme was chosen for it. Here and in other places the existence of a corn mill may explain this, but there is little to hold people in such a village, and nothing to attract. The marvel is that so many are ready to stay in these places from which the tide of enterprise seems to have ebbed. The soil between Lidstone and Chipping Norton is not good, but even with this condition the farming might be better, and consequently more labour might be employed and a fuller village life be possible.

It is in this part of the county that the association of farmers under the auspices of the National Farmers' Union has been most fully developed. The area under the Banbury branch embraces some 400 farmers, and of these 220 are members of the Union. The success of the organization is attributed largely to the activity of the secretary, a local farmer, but also partly to the fact that farmers here are more alive to the advantages to be gained from organization. The Union concerns itself with legislative and administrative schemes, and with all the general problems which affect the position of farmers. Among legislative proposals they attach most importance to those connected with security of tenure, and for administrative schemes they express appreciation of the Board of Agriculture's grants for the provision of high-class stallions, bulls, and boars. In this connexion the co-operation between the farmers and the Board seems to be more active than it is in other districts.

CHAPTER VI

THE AGRICULTURAL PARTNERSHIP

LANDLORDS, agents, and farmers attach much importance to their reciprocal relations in the organization of agriculture. Difficulties arising in connexion with soil and climate are always recognized as affecting the management of farms and the administration of estates. These occupy the attention of farmers from day to day and enter first as commonplaces into any discussion of their business. With the landlord-tenant system, however, there are few cases where, in considering the problems which confront them, either of the parties does not turn ultimately to a consideration of their relations to each other. For these have an influence on the manner in which difficulties are met and handled, favourable or unfavourable in proportion to their harmony or absence of it. Thus the fortunes of agriculture in Oxfordshire, or in England indeed, depend not only on the properties of its soil, on the smiles or frowns of the sky, on markets, or on the individual skill and energy of farmers and landlords, but on the nature of the relations which exist between the two classes who are yoked together in some fashion like a team.

These relations have been described as a partnership. There may have been a reservation indicating that it is distinguished by certain features from the more common and better defined partnerships in the commercial and manufacturing world, but these are differences in form rather than in substance, for in the working of farms all the elements of a financial partnership appear. If a tenant contemplates any new enterprise, if he meets any extraordinary difficulty in the management of his holding, he almost invariably turns to his landlord for support. This is a habit, and is in itself a proof that such requests receive consideration and bear fruit. On the other hand, a landlord relies on his tenants to make an adequate use of the capital he has invested in their holdings and to maintain by their policy the value and amenity of the estate.

For many generations in this country progress in agriculture has depended largely on co-operation between landlord and tenant. Whatever was called for in the way of supervision, equipment, and working was supplied by these two parties, the State displaying a somewhat distant interest. Recently, however, both national and local governments have approached more closely and have taken an active share in the business, constituting a partnership again distinct in form but essentially similar to the other. It may be confessed, however, that although the first two partners always invite and look for the co-operation of the last, they frequently regard its actions with a suspicion which prevents them from recognizing their common interest.

These parties, public authorities, landlords and farmers, group themselves together by the fact that the responsibility of initiating policies which have for their object the improvement of agriculture rests on them. The duties assumed by each are marked off with reasonable clearness, although a few important operations frequently fall between two of them, and are left undone. The care of national health, the prevention and extermination of disease among live stock, the provision of a general and agricultural education, of roads, and, in certain cases, of water and drainage, are undertaken by the public authorities. The equipment of farms with all, or most of, the permanent, immovable capital necessary for their working has been the landlord's part, and, within limits which have been gradually restricted, a voice and influence in deciding the system of farming. These things being provided and determined, all that remains in the way of equipping farms with live stock and movable capital, of framing and carrying out a system of management, rests with the farmer.

The efficiency of such a partnership depends on the intimacy and soundness of the financial connexion between its members. For a long time the association of landlord and tenant involved more than a partnership for making money, and in many cases still carries with it something beyond this. There were relations of a legal and personal kind, policies inspired by pride in estates, by the desire to see things done in a handsome manner without reference to economic considerations. Many landlords found their chief business interest, and perhaps their greatest pleasure, on their estates. They created a kind of social life in which farmers and others shared. They kept hounds at their own expense, and maintained other forms of sport in which any one was free to take part. The sports themselves, as well as the conditions under which they were pursued, might not win wide approval to-day, but they served the purpose in earlier times of enabling landlords and tenants to keep in touch with each other, and many of the latter even now would be glad to have the opportunity of introducing a little bit of business in the hunting field. In any case there was a form of communal life in which the different classes met each other and were held by a variety of bonds, partly paternal and filial, partly legal, financial, and social. For several reasons relations on this old footing have broken down to a large extent, and are slowly undergoing reintegration on a new and almost purely economic basis, and there is ground for hoping that the result of this will be closer co-operation of the partners, and consequently greater efficiency.

The movement in this direction commenced with the farmers. They complained that they were deprived of incentives to enterprise. In many cases at the termination of old tenancy agreements they lost what might properly be considered the fruits of their activities. Demands were made for protection against this, and it is to be feared that there was a good deal of inferior farming on the part of farmers to escape increase of rent. To meet these demands the Agricultural Holdings Act of 1875 was passed. This

Act provided that 'where . . . a tenant executes on his holding an improvement comprised in either of the three classes following, [here the schedules are given] he shall be entitled, subject to the provisions of this Act, to obtain, on the determination of the tenancy, compensation in respect of improvement'. The compensation was to be fixed by referees and umpire, whose appointment was subject to the county court. The Act was optional, leaving to landlords and tenants the right to contract out of it. In 1880 an Act was passed 'for the better protection of occupiers of land against injury to their crops from ground game'. A new Agricultural Holdings Act was passed in 1883, providing that no agreement come to between landlord and tenant could legally prevent a claim for compensation from being made. Any such agreement was declared to be 'void both at law and in equity'. The Act of 1900 substituted a single arbitrator for the two referees and umpire, and transferred jurisdiction with regard to his appointment from the county court to the Board of Agriculture. Last of all, the Act of 1906, afterwards incorporated in that of 1908, introduced a new principle, providing that the tenant should receive compensation 'where the landlord of a holding, without good and sufficient cause, and for reasons inconsistent with good estate management, terminates the tenancy by notice to quit'. This Act also gave the right to the tenant 'to practise any system of cropping' and to 'dispose of the produce of the holding', subject to restrictions with regard to the year before he quits the holding.

This marks the last stage which has been reached in defining the relations of landlords and tenants by legislation. As was inevitable, against this hardening of the tenants' demands for the recognition of their rights on strictly economic ground there was a stiffening of the landlords' attitude on the same basis. Formerly improvements were often made by landlords and no revision of rent took place with reference to them; now expenditure is generally agreed to on condition that the tenant will pay interest, and policies are determined much more by a consideration of mutual financial advantages on either side.

Perhaps the latest instance of the assertion of this economic principle is the Development Commission, which has been appointed with wide powers to represent the part which the Government is prepared to play in developing the resources of the country, and more particularly those that are agricultural. Under the terms of the Development Act the Commissioners are not allowed to spend money on schemes which will produce as a direct result an increase in the value of privately owned land. Like farmers and landlords, the Government want to be secured in an adequate return on their expenditure. It may be said that agriculture suffers from this limitation of the Commission's powers, since work which would be of immediate benefit to the industry cannot be undertaken. In Oxfordshire to-day there is urgent need of improvement in farm roads, in drainage, and in amelioration of land by chalking, but however great the number of unemployed may be for whom the Commission must provide work, they cannot get a field here, since this principle must be safeguarded.

At first sight this attitude may appear sordid and inauspicious. In reality the situation is full of promise. It is doubtful if there is any industry in which there has been among the people who are essentially partners in it so little of a clear understanding of each other's point of view, motives, and interests. Now they have got to the stage where each of them says: 'I will not spend anything, unless I get the proportionate share of the increased produce due to my expenditure. I will not do any work, unless I get so much remuneration.' This is a long step in advance, and there is reason to hope that the attitudes will soon change from negative to positive, and that the partners, who are now defining their positions by stating what they are not prepared to do, will come together and explain to each other, in relation to work that is so necessary, what they are willing to undertake.

In the circumstances it is remarkable that so much has been achieved. When it is realized how indispensable to economic progress is the recognition of the right of different partners to the share in the fruits of the enterprise commensurate with their contribution to it, and how little has been done to secure this by any deliberate arrangement, by demands reasonably urged and concessions ungrudgingly made, there appears to be no cause for wonder that results are less satisfactory than might be expected. To a large extent agriculture in Oxfordshire makes progress under what is virtually an easy-going, half-hearted strike among the parties responsible for its advancement. The issues are not clear and intelligible, because the parties have never met to state and discuss them. In other words it might be said that the partnership is lukewarm and even cold. This general description is drawn from various forms of evidence, among them statements by men who are reputed to be good farmers who declared that, owing to one or more elements in their relations with landlords, which made the success of their business doubtful, they were now indifferent whether they continued or gave up, statements also by agents who were dissatisfied with the management of certain farms, and whose attitude to the tenants was inspired by the feeling that they would like to give them notice to quit.

Some people find in this situation an argument for the proposal that partnership between landlord and tenant should be dissolved, that the responsibility for the progress of the industry should as far as possible be undivided, that the occupier should be owner.

There are objections to this which are serious, because they arise from the attitude of the farmers, on whose cooperation the success of such a change would largely depend. It is possible that Oxfordshire farmers might acquiesce in some scheme for accomplishing this transfer, if it were imposed upon them, but there is not the slightest indication of any active desire among them to terminate their association with landlords, or to assume their responsibilities. They seem to have adopted this attitude as a result of reasoning on perfectly sound lines. On the one hand, they review their own experience, and, on the other, they form a judgement as to what their position would be, if they were to become owners, and to that extent stood alone.

Taking their experience, most of the changes that are likely to affect the fortunes of agriculture have fallen within that of the present generation of farmers. Economic conditions have not been by any means one-sided during the last thirty years. In the earlier part of this period agriculture was sinking with the fall in prices and unfavourable seasons, and it had not recovered from the loss in live stock a few years previously through disease. These things rendered the farmers' position as difficult and precarious, possibly, as it ever had been, and there was a good deal of suffering among them; but even in the worst times, when it was hard to make adjustments, the partnership with landlords worked well enough to prevent its merits from being obscured. Farmers never lost their appreciation of what was favourable in their position. While they have not allowed it to be assumed that they consider the system perfect in form or in operation, they have shown no disposition to displace it. This attitude, representing a mixture of caution and of desire for modification, seems to be an accurate reflection of their experience. The majority of farmers in Oxfordshire have occupied holdings on two or three different estates during their career, and therefore have been under more than one kind of administration, one of these probably so consistent with good farming that little better could be desired, and another so incompatible with it that some improvement was necessary. 'Give me four or five landlords like . . . in this part of the county, and there won't be much wrong with farming.' This was the statement of a farmer who named a corporate body as his model, although some people might find reason for believing that a stricter supervision and calling to account would stimulate farming in that parish. However this may be, tenants seem to have known and heard enough good of the system under which they hold to prevent them from seeking to abolish it.

Apart from history the present economic experience of farmers affords a basis for judgement. Agriculture has always been a favourite subject of economic diagnoses, and by far the most common conclusion from these is that the industry suffers owing to lack of capital. This view is widely held in Oxfordshire, and people express it colloquially by saying that agriculturists have too little 'strength'. No one is more anxious than farmers to see an increase in the capital available for the development of their business, and although they may not have considered the subject in a broad, general way, they have dealt with it practically when it has confronted them in particular forms. The partnership with landlords is one method of securing this, and apparently no alternative presented to farmers has dislodged this system from the highest place in their estimation. If farms are regarded as business undertakings, it may be found that on an average the greater proportion of the money invested in them, perhaps about three-fifths, is represented by land and permanent equipment. To this extent, therefore, farmers are relieved from any responsibility in raising capital. It is true that by other methods, by government loans or credit banks, the nominal ownership of land can be obtained by the tenant without any large payment on his part. For example, if the total capital in a farm is £10,000, and if the tenant provides £4,000 of this, it may be argued that it is immaterial whether the other £6,000 is furnished by a bank, government department, or landlord, if the interest in the one case is no more than what is called the rent in the other. This is not the view of Oxfordshire farmers. They seem to consider that the personal, or partnership, element eventually makes a difference, even where at first the terms are equal, or in favour of the loan and ownership system.

The economic soundness of any system must be measured by the amount and value of the things produced under it. This is the fundamental principle of all economics. Under what arrangement will the engines make the greatest number of revolutions? In this case under what system of organization will the greatest amount of produce be raised on the farms? For reasons of a more or less fortuitous nature Oxfordshire farmers approve of a division of duties and responsibilities. In all conversation with them they give the impression that their chief desire is to specialize and excel as cultivators, as breeders and feeders of live stock. This engages, if it does not wholly engross, the thoughts of the most successful, and seems to be the positive explanation of their preference to leave with the landlords that part of the business which they have assumed. Suppose that in a normal time a farm is let on terms which give the landlord and farmer each 5 % net return on their invested capital. A depression sets in, and the net return on all the capital falls to 2 %, or is wiped out. By the principle of partnership the landlord reduces the rent in some proportion and shares the loss, so that the farmer's expenditure is less by the amount of reduction than it would be if he had mortgaged the land in order to purchase it, and were paying interest. His loss is also less than it would be if he owned the land free of burden, since the landlord has assumed responsibility for the reduction in the value of the land. On the other hand, if prosperity comes and the net return rises to 12 % on the invested capital, by the same principle of partnership the landlord would share in this increase, getting some proportion more than 5 %, reducing to this extent the amount which the farmer would receive if he had mortgaged the land, or if he owned it clear. Thus with the landlord-tenant system the fluctuations which affect the farmer's position are not so wide and violent. His gains are not so high in good times, if we assume that he can obtain sufficient capital to take advantage of them, nor are his losses so heavy in a depression, as they are where he owns the whole business. The landlord taking off some profit at the top, and bearing some loss at the bottom, gives the farmer a more stable position. This has the effect of making him concentrate his attention on cultivation, and look for profit from this rather than from speculation.

While Oxfordshire farmers appreciate the merits of this system, they are not fully satisfied with its operation. Their criticism, offered without a trace of harshness, runs in one direction: they consider that the business connexion between landlords and themselves is too loose. They do not find an adequate recognition of the fact that there is an identity of interests between them. 'Partnership' as a word did not occur in their discussion of the subject, the idea of such a relationship only being suggested by their repeatedly expressed desire for closer co-operation of landlords in particular schemes. They dislike the barren separation or estrangement which exists.

Another flaw in the partnership seems to account for much of its unsatisfactory working. The desire of the partners to make money does not appear to be sufficiently unanimous and constant, and the rules of the game are imperfectly understood, or are ignored. Landlords avowedly have come into the business with other motives than the making of money, with generous motives in most cases. This has a prejudicial effect on the industry. Benevolent impulses and goodwill on either side are inadequate substitutes for the observance of the economic principle which demands that parties should be encouraged to go on contributing to the success of the industry by receiving remuneration in proportion to their contributions. Until a clear understanding is reached on this ground, until what ought to be the supreme aim of all those engaged in agriculture is established as such, there cannot be a sound partnership.

The erratic policy, the combination of benevolence which is creditable with unsound economic practice, may be illustrated. An Oxfordshire farm of over 800 acres on one of the larger estates was occupied by a lady, a widow, in 1879, and the lease expired in 1883. The rent under this lease was *24s.* per acre. The agricultural depression which became acute in the first of these years changed all conditions, turning the profits of tenants into losses, but for five years this tenant was required to pay the rent which had been fixed under entirely different circumstances, the change in these was ignored, and met no alteration in arrangements between her landlord and herself. In 1883 her son offered 10*s.* per acre, and after he had been told that it was an outrageous proposal, and sent off in the belief that he had no chance of getting the farm, his offer was accepted. A year or two later the rent was reduced to 9*s.* per acre. In 1888 the farm was divided, 300 acres being cut off for the creation of a new holding. This was equipped with new house and buildings, and let to a tenant at 8*s.* per acre. The landlord then, from a sense of fairness, reduced the rent of the 500 acres to 8*s.* Three years afterwards he reconstructed the house and buildings on this farm at a handsome cost. Since that time both farms have been sold, and the policy of the whole estate has changed, the benevolence having given place to an economy which, in the opinion of practical men, deprives tenants of reasonable facilities for management, and pushes rents to a point at which success is rendered doubtful.

It is hardly necessary to emphasize the unwisdom of such administration. First of all, the failure to adjust the rent when the depression was throwing a heavy burden on the tenant was a serious economic error. The rent agreed on in 1883 was probably about the value of the farm during the five previous years. If so, the tenant had paid almost three times more than the value, her capital must have been depleted, her efficiency as a farmer impaired, and the producing capacity of the farm reduced. Yet if one may judge by the generous expenditure of the landlord in the following years, he was in a position to have observed the principle of partnership, to have taken a share in bearing the burden, and thus to have lessened if not prevented the detriment incurred by agriculture. Such a story is frequently told. It is said of men with the highest reputation as landlords by their best friends that they were too long in reducing rents after 1879.

There are people, perhaps, who would regard the second phase of this administration—the large generosity—as not open to exception. Provided the landlord was able and willing to spend money in improvements, irrespective of the return he was likely to get, what harm was done? To oppose this argument looks like treachery to agriculture, but one-sided arrangements cannot run long, no matter which of the partners assumes the excessive share of responsibility. Expenditure without a proportionate return exhausts most men in time, and produces a reaction. It did so in this case. The history of agriculture in Oxfordshire affords abundant evidence of the respect which economic laws exact from men. A landlord or farmer may pursue a policy which shows a disregard for these laws, which results in financial loss. He may cherish erratic schemes after their unsoundness has become clear, and may also forgive himself for some time, but it seems to be a rule that his successor never forgives the loss, and that he always reverses the policy with more or less emphasis. Thus on some estates the administration appears to be inspired in one generation by a sort of unprincipled benevolence and in the next by an excessive thriftiness.

Among landlords and agents, and to a less extent among farmers, pessimists are found. Their view is that agriculture as a basis of investment cannot offer any satisfactory prospect, that it is not comparable with other industries in this respect. There are, however, a sufficient number of estates and farms on which the management gives results that do not support the theory. Where the relations of landlord and tenant are at all consistent with economic development, both parties are generally satisfied and optimistic. While comparisons have frequently been drawn between agriculture and other industries with reference to their capabilities as producers of dividends, little has been done in the way of examining the different methods under which they are organized. These show wide contrasts. There may be no reason for assuming that the smaller and probably less certain returns to capital in agriculture are explained by any one cause, but, taking this element of partnership common to all businesses, there is a difference between the recognition which it receives in agriculture and that which is accorded to it in most other callings. If partnership is accepted as a system of management, the principle which governs its working must be understood and observed, otherwise it will prove less efficient than a system which may really be inferior, but which is properly worked. This principle requires complete reciprocity among partners, that each of them should take an interest in the enterprise, that his share in the fruits should correspond with the obligations he has accepted and fulfilled. The free interchange of opinions is necessary to maintain the confidence of partners in each other, and confidence is indispensable for uniting their capital and energy, while it is the united effort that gives efficiency beyond anything that is possible for the individual, whether circumstances are favourable or adverse.

It is only fair to say that the generation of administrators who came into office about thirty years ago had frequently to deal with problems of extreme difficulty created for them by their predecessors. On the basis of inaccurate analysis of agricultural conditions about 1870 extraordinary estimates of what agricultural land was worth were made, and extraordinary prices were paid for farms, prices on which an adequate return could not be obtained from any production that was possible on these farms. According to the reports of people who remember what took place the inflation arose from the speculation among landlords and tenants which was inspired by their mutual activities. Under a certain conviction some tenants offered high rents, and under the same conviction some landlords offered high prices, and the latter to maintain the high ground thus taken raised the rents to, or as far as possible towards, the level of the prices. The result was that rents were often raised to a point that was dangerous for the cultivators, and when the decline in the value of agricultural produce occurred, the prices paid for land only a few years before were there to make a reduction in rent difficult in proportion to their height. For example, in 1872 a farm of 250 acres was purchased for £95 per acre, and added to an estate. New buildings were erected at a cost of £3,000, making the total amount paid £107 an acre. The rent was fixed at 55*s*. an acre, which was said to be too much for the farmer to pay, and obviously too little as a maximum to recoup the landlord. Some ten years later under the depression it was reduced to 30*s*. an acre, but not until the farmer's financial position had been somewhat prejudiced.

Pushing the comparison still further, this is more clearly recognized in engineering, mining, and other industries than it is in agriculture. If the position of the managing director in one of these is compared with that of the tenant farmer, some idea of the difference in this respect will be gained. The importance attached to the policy of the managing director, the pains taken by his fellows to understand the reasons for its adoption, to satisfy themselves as to its financial results, make the connexion between them much more intimate than that between landlord and tenant. Nothing obscures the identity of interest and aim. Directors and shareholders appreciate the fact that if the manager is handicapped in carrying out his policy, their interest takes detriment. Unfortunately from the economic point of view these things are less obvious in matters connected with farming. Other aspects of the relations between landlord and tenant assert themselves, and the partnership becomes a loose and comparatively fruitless association. Wherever this is the case it is hardly possible that there can be satisfaction on either side. When landlords delegate to farmers so much of the control and development of their estates, they place them in an extremely important position. In their common interests landlords ought not to withdraw, but ought to give every support to the farmers consistent with sound economic management, to make them feel their responsibility to themselves as partners who have a right to look for a certain standard of attainment in farming. There is a common impression that farmers as a class have an extravagant desire to be left to themselves, that they welcome isolation and cherish it. This is true only of a minority, if true at all, and nothing was more remarkable than the frankness with which the majority discussed their problems, and expressed the wish to have fuller business intercourse with their landlords.

These references to the importance of recognizing that the relations of landlord and tenant constitute what is essentially a partnership must not be taken as imputing blame for failure on their part to appreciate the nature of their association. If the true principle of partnership has been discovered and respected more fully in other industries than in agriculture, there are reasons for this. The partnerships differ in form, the capital invested in agriculture by the two persons not being merged, but embodied separately in equipment with obvious and tangible distinctions. Thus it is not said that a landlord has £5,000 worth of capital invested in a certain farm, and that the tenant has £2,000. Thought, and therefore language, follow the visible form of things rather than the financial substance, and it is said that the landowner owns the land and buildings, while the farmer owns the implements and live stock. This serves to hide the unity of interest, and perhaps gives occasions for differences which do not arise in other kinds of business.

One further circumstance, at least, distinguishes the relations of landlord and tenant from those of director and managing director. The landlord has a prerogative which the director does not possess. If for any reason he happens to use the power which his legal position as owner confers on him, and cuts short the discussion of financial or other questions which may arise between him and the tenant, the principle of partnership is infringed, and the sense of its existence disappears. Landlords require the capacity to take a strongly disinterested point of view, and must be able to exercise extraordinary patience, if they are to handle situations with which they are faced without falling back on this uneconomic solution of a difficulty. As often as they resort to this, harm is done. It is things like these which have rendered the transition from the old and mixed relations to those that are more purely economic a slow process. But if agriculturists are to expect with any reason an approximation in their returns to those obtained in other industries, they must overcome such difficulties, however formidable, and bring their methods more into harmony with those pursued in these industries.

The depression had a considerable influence on the relations of landlord and tenant, and without undue depreciation it may be said that these relations might have carried both parties through it with more credit. For the greater part of a generation previous to 1879 farming was prosperous, rents were high, landlords were ready to spend comparatively large sums in equipment, and found pleasure in going round the farms on their estates. The position of the farmer was an agreeable one. But when adversity came, and with it the question of sharing losses instead of profits, the relations suffered a change. Expenditure on many estates had to cease, and there was less personal intercourse between landlords and tenants. To be asked always for a reduction of rent, and often for repairs and improvements, to hear stories of declining prosperity, and to see evidences of it, was not a pleasant experience, and led to a disintegration of old ties. The partnership, such as it was, did not stand the strain in too many cases, for the partners did not share simultaneously and proportionately in the misfortunes of the industry, and the loss due to this has not been repaired even to-day.

For some centuries now people interested in agriculture have seen clearly that a desirable attainment in its practice requires a considerable measure of well-being among farmers and others engaged in it. An interesting statement of this view appears in a *Report on the Agriculture of Eastern and Western Flanders*, drawn up by the Rev. Thomas Radcliff in 1819 at the request of lords and gentlemen who constituted the Farming Society of Ireland. 'Nothing', says Mr. Radcliff, 'tends more to the uniform advancement of good farming than a certain degree of ease and comfort in those who occupy the soil, and in the labouring classes whom they employ. Without it, an irregular, speculative, and anticipating extraction of produce, always followed by eventual loss, is resorted to, in order to meet the emergencies and difficulties of the moment; whereas, under different circumstances, the successive returns of a well-regulated course become the farmer's object rather than the forced profit of a single year; whilst he himself is thus intrinsically served, his landlord secured, and his ground ameliorated.' About a century earlier, not long after the Treaty of Utrecht was signed, the action of the Flemish landlords in supporting their tenants was the subject of commendation in the British Parliament. Flanders, as so often, had been the field of war between other countries, and had been devastated, and it was the manner in which the landlords had remitted rents until the farmers had re-established themselves that won the approval of English statesmen.

This passage from Mr. Radcliff's *Report* was quoted by agricultural Journals of his time, and it expresses happily what agriculturists in Oxfordshire feel to-day. Farmers as well as agents criticize members of their own class, and the object of their remarks is this 'irregular, speculative and anticipating extraction of produce', a practice which they say prevails rather widely to-day. And it may be confessed that the condition of much of the land supports the statement. Complaints on this point, although they were common, were hardly ever marked by undue or unpleasant severity, those coming from agents naturally being the most uncompromising and strong, but it is disappointing to find that no really definite steps have been taken to avoid what has been so often deprecated, and to realize what has been for so long the aim of a general aspiration. The mutual criticisms of agents and farmers indicated the nature of the problem. A maxim with both parties is that so far as land is concerned what they get out of it is in exact proportion to what they put in. That is, the land behaves with so much consistency, and in such definite relation to men's treatment of it, that its conduct is regarded as a subject about which certain rules can be laid down. It treats men exactly as they treat it, and in this respect resembles men themselves, an impression which farmers frequently convey by their manner of speaking about it. By this almost human characteristic land may be said to be brought into the agricultural partnership, standing between landlord and tenant, and transmitting from one to the other the fruits appropriate to the treatment which one receives from the other. Thus, if the landlord gives too little to the farmer, or takes too much from him, the farmer gives too little to the land, or takes too much from it, and finally the land gives too little to the landlord, or takes too much from him. Or if the policy of trying to get too much and give too little originates with the farmer, the punishment comes round to him with inevitable certainty. The result is that land, landlords, and farmers are reduced to economic impotence. While a survey of agriculture in Oxfordshire shows that there are no soils in the county which grow crops spontaneously and without reference to the money and labour spent on them, it failed to discover any landlords or tenants who are prepared to spend money or labour without getting a return. This is a universal principle, and men recognize it in a general way, but it would seem that there must be a vague belief of a contrary kind underlying the policy of a good many people in both classes, who take little trouble to see that what they give bears any relation to what they expect, and seem to think that somehow they can get behind the principle. The process resembles some unchecked and indiscriminate system of overdrafts, and is as fatal to sound financial and economic conditions.

Much of what has been said about the relations of landlord and tenant applies to their association with the national and local governments. There are certain schemes too onerous in their nature, and too far-reaching in the scope of the benefits they confer, to fall properly within the category of tasks which should be performed by private individuals. Progress has been made in the methods of treating various large problems, but there is evidence that agriculture suffers from lack of facilities which ought to be provided by public authorities. This again is partly due to misunderstanding among the different parties concerned. Farmers adopt an attitude towards the activities of administrative bodies that is by no means singular. Rates do not form a large item in the expenditure attached to farming in Oxfordshire, but the prospect of an increase, no matter in respect of what service it shows itself, seems to shock the farmer as if it were only the prelude of some vague but fearful catastrophe. It was an interesting experience to discuss the problem of obtaining an adequate water supply with a farmer who owns a large herd of cows, and to ask if a wider scheme than one limited to the farm or village might not be undertaken with advantage by local and national authorities together. The aspect of the proposal which seemed to impress him was some overwhelming increase in rates which made him declare that he saw the possibility of farming being crushed out of existence by their weight. He had not considered whether the payment of a few pounds more in the year might be an investment which would yield a handsome return. Farmers forget what public bodies have accomplished for them. They have never gone into the subject of comparative accounts, taking what they pay to-day for the maintenance of public health, roads, and other services, and estimating carefully what they would require to pay if they had to employ their private physicians, men, and horses in providing these things, or in repairing the losses which their absence would involve. It is easy to overlook this aspect of affairs, but occasionally a little piece of history recalls it, as when the guide-book tells us about Leafield that 'near the Church is an ancient cross, restored in 1873 by the inhabitants of the village as a memorial of their deliverance from the scourge of the small-pox'. People everywhere are apt to imagine that the freedom from epidemic disease, which enables them to market their produce and to buy in return, is due to some spontaneous provision of Nature with which human forethought and labour have had nothing to do. This is an error into which we should be prevented from falling by a very slight attention to local history, or tradition.

There are some parts of the work performed by administrative bodies which one would not choose in order to state a case on their behalf to agriculturists. The money spent on education, for instance, appears to most of these to be badly invested, and it would require a long argument to prove that it is a sound financial scheme. A water supply, however, has on its face something to commend it. If farmers were to consider carefully the question whether it is more economical to employ men and horses for several weeks in summer carting water for cows, young cattle, sheep, horses, and even for household purposes, or to pay something additional in rates, they would in the majority of cases probably find the latter scheme far sounder. The objection will be urged that rate-payers other than landlords and farmers must be considered, that a scheme of this kind may be one-sided in its distribution of benefits, that while agriculturists may receive an immediate advantage of 100 %, urban rate-payers, if called upon to contribute, would sustain an equal loss. This is no reason, however, for stopping progress, but an argument for adjusting the relations of the different classes through the partnership in which they are bound by necessity. Urban rate-payers also stand in need of some services to assist them in their various callings, and accounts can be 'squared' if sufficient pains are taken. Something is already done where a district is declared a 'special area' for any purpose. But the point of view which should be brought to the notice of every class in the community is that the proper economic equipment of their neighbours—their customers, or those who supply them with the material of their business—is not a matter of indifference to them. The prejudice against rates and rating authorities seems to arise from the fact that new charges are imposed on rate-payers in a compulsory, and in what appears to be an arbitrary form. High-handedness, however, in this matter is more apparent than real, and the impression that it exists is accounted for by the inadequate interest taken in the work of the authorities. If farmers remember that the rules which govern their own business apply also to that administered by the county and other councils, they will not condemn expenditure in general terms. Enterprise in the management of a county is as necessary as in that of a farm, and one must keep pace with the other. In Oxfordshire there are a sufficient number of experienced landlords, agents, and farmers on the councils. They are familiar with the economic conditions affecting estates and farms, and are little likely to overlook the effect of increasing the rates. With this knowledge it is for them to decide when certain services which are performed by individuals with a large amount of duplication in labour and with varying efficiency may be organized more economically by public bodies. This ought to depend not only on their experience but on a careful and exhaustive calculation of costs and advantages under the one system as compared with the other, which is nothing more or less than a business question. At present, perhaps, members of councils rely on their judgement unsupported by figures, and seem generally to lean towards a cautious policy, and there is reason for believing that there are more works which might be undertaken with profit to themselves and to the members of the agricultural community.

Those are for the most part general observations on the relations of landlords and tenants and on the work of local government. Whatever the merits of such a general review may be, there will be the feeling that the fortunes of the industry are inadequately described. To gain a complete and accurate impression of the history of agriculture during the last forty years, a vast amount of information which lies hidden in estate offices would require to be published. Fortunately something has been done in this matter which not only throws much light on the subject, but which serves as a precedent of what might be more frequently done. In February, 1892, Mr. L. L. Price, Treasurer of Oriel College, read a paper to the Royal Statistical Society entitled: 'The Recent Depression in Agriculture as shown in the Accounts of an Oxford College, 1876–90.'[1] Mr. Price has continued the work begun then, and read papers to the same Society in January, 1895, and in November, 1905, giving a more limited review of the accounts of all the Colleges. Finally, in May, 1913, in a paper read to the Surveyors' Institution, on their visit to Oxford, he submitted further figures with regard to the revenue of Oriel College which, taken with those given in the first paper, make it possible to survey conditions from 1876 to 1912, a period embracing the last years and culmination of the prosperous times, the whole of the depression and the most recent years during which an improvement has taken place.

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[1] *Journal of the Royal Statistical Society*, March, 1892, March, 1895, and December, 1904; *Transactions of the Surveyors' Institution*, vol. xlv, part xii.

The following table gives the rents of purely agricultural estates in Oxfordshire and Berkshire belonging to Oriel College from 1876–7 to 1912. The extent of the estates was 5,298 acres in 1876, to which 48 acres were added in 1877 and 11 in 1887, making a total of 5,357 from the last year onwards.

TABLE I.

	£
1876–7	8,583
1877–8	8,727
1878–9	8,711
1879–80	7,958
1880–1	7,605
1881 (second half)	3,588
1882	7,124
1883	7,132
1884	6,954
1885	6,620
1886	[1] 6,540
1887	6,191
1888	5,852
1889	5,705
1890	5,661
1891	5,682
1892	5,672
1893	5,522
1894	5,428
1895	5,359
1896	5,114
1897	5,007
1898	5,011
1899	4,971
1900	4,971
1901	5,026
1902	4,892
1903	4,959
1904	4,951
1905	4,966
1906	4,953
1907	4,971
1908	5,110
1909	5,066
1910	5,065
1911	5,066
1912	5,048

From other tables presented by Mr. Price it is possible to show more fully the ways in which the interests of landlords and tenants were affected by the changes in conditions, and the steps taken by the former in this case to deal with the problem. Table II in the first column gives the rents which have been payable from all the estates of Oriel College under the agreements with the tenants. It may be said that these estates are for much their greater part agricultural. In the second column the deductions from the agreed rents (1) in the form of abatements granted by the College to meet special circumstances, and (2) in the form of arrears into which the tenants fell notwithstanding the abatements, are given. The third column shows the arrears paid in different years, the next the actual amounts of the rent received, and the last the outstanding arrears.

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[1] Additional land purchased.

TABLE II.

Year.	Rent due.	Deductions. (1) By abatements.	Deductions. (2) By arrears.	Additions. By payment of arrears.	Rent received.	Outstanding arrears.
	£	£	£	£	£	£
1876–7	10,279	36	20	—	10,222	551
1877–8	10,466	20	—	292	10,738	258
1878–9	10,462	255	1,178	—	9,028	1,437
1879–80	9,681	905	1,566	—	7,209	3,004
1880–1	9,307	322	—	469	9,454	2,535
1881 (2nd half)	4,386	86	807	—	3,492	3,342
1882	8,800	47	—	56	8,808	3,286
1883	8,851	673	—	753	8,930	2,532
1884	8,712	277	—	440	8,875	2,091
1885	8,444	470	152	—	7,821	2,244
1886	8,478	327	1,023	—	7,128	3,267
1887	8,047	1,548	—	188	6,687	3,078
1888	7,686	411	—	1,703	8,978	1,375
1889	7,536	108	—	319	7,747	1,056
1890	7,499	44	—	115	7,570	940
1891	7,561	24	170	—	7,366	1,110
1892	7,573	353	—	91	7,311	1,019
1893	7,526	712	418	—	6,395	1,438
1894	7,403	1,262	—	949	7,090	489
1895	7,281	855	—	243	6,668	246
1896	6,979	528	—	59	6,509	187
1897	6,799	161	—	179	6,817	8
1898	6,846	24	53	—	6,768	61
1899	6,847	4	2	—	6,839	63
1900	6,820	13	—	10	6,818	53
1901	6,987	20	27	—	6,939	80
1902	6,829	30	4	—	6,795	84
1903	6,937	355	—	64	6,646	20
1904	6,930	351	75	—	6,503	95
1905	6,936	72	—	91	6,955	4
1906	6,923	27	—	1	6,895	5
1907	6,943	25	154	—	6,764	159

TABLE II (*continued*).

Year.	Rent due.	Deductions. (1) By abatements.	 (2) By arrears.	Additions. By payment of arrears.	Rent received.	Outstanding arrears.
1908	6,998	22	—	159	7,134	—
1909	7,052	118	25	—	6,908	25
1910	6,988	10	73	—	6,904	98
1911	7,044	10	30	—	7,004	128
1912	7,040	72	—	55	7,022	73
1913	7,041	27	26	—	6,988	99
1914	7,048	20	—	64	7,091	35

This table gives the most complete view of the financial position of the farmers during the whole period 1876–1914. It would be difficult to add anything to the force of the lesson which the figures standing by themselves convey. The reduction of rents, the amount of the abatements, as well as their variation, show that the landlords responded actively to the appeal made by the economic condition of the tenants. Every one who remembers the different seasons will be able to judge the opportuneness and adequacy of the responses. On the other hand, the payment of arrears within a comparatively short space proves that the farmers did not lose the sense of their obligation, or seriously relax their efforts to rehabilitate themselves.

These movements of rents are illustrated in the following diagram:

RENTS RECEIVED. 1877-1914. (ORIEL COLLEGE)

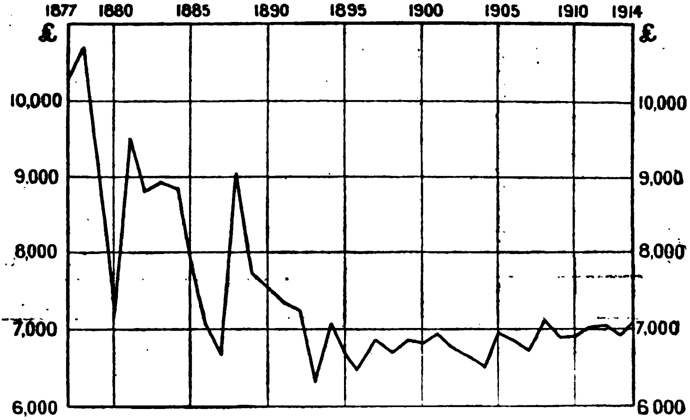

Table III contains information which may be considered of greater interest to landlords and agents than to farmers. While the previous table shows the disparity between the rents at which farms stand in the estate books and the rents actually received for them, this one shows a further stage in the process of deduction from the gross income, giving the proportions of this absorbed in payment of public burdens and of repairs.

TABLE III.

RECEIPTS AND OUTGOINGS ON A SINGLE LARGE ESTATE YEAR BY YEAR (ORIEL COLLEGE).

Year.	Rent Received.			*Outgoings.*						Net Receipts.		
				Total for Rates, Taxes, and Tithe.			Total for Repairs.					
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1887	3,032	16	6	452	17	0	863	17	7	1,716	1	11
1888	2,998	0	1	424	11	11	824	19	7	1,748	8	7
1889	2,692	11	6	373	19	3	757	12	7	1,560	19	8
1890	3,025	15	2	386	10	4	198	6	4	2,440	18	6
1891	2,796	10	10	368	11	9	1,309	8	11	1,118	10	2
1892	2,687	7	8	369	2	2	665	7	8	1,652	17	10
1893	2,113	11	1	361	0	11	577	10	5	1,174	19	9
1894	2,384	0	0	370	16	0	398	15	10	1,614	8	2
1895	2,524	13	1	373	16	4	700	15	9	1,450	1	0
1896	3,086	11	7	362	19	7	590	7	0	2,133	5	0
1897	2,635	19	4	455	16	5	245	10	8	1,934	12	3
1898	2,628	6	0	456	7	6	304	18	9	1,866	19	9
1899	2,585	7	9	440	17	0	646	14	2	1,497	16	7
1900	2,586	7	8	430	15	6	279	15	2	1,875	17	0
1901	2,587	4	0	470	0	11	602	1	0	1,515	2	1
1902	2,584	4	0	485	8	8	1,092	7	4	1,006	8	0
1903	2,681	5	2	519	7	5	1,300	18	10	860	18	11
1904	2,406	15	3	488	7	1	561	10	8	1,356	17	6
1905	2,883	2	0	494	9	10	671	1	3	1,717	10	11
1906	2,580	8	8	494	8	4	1,118	16	9	967	3	7
1907	2,435	19	8	513	2	8	1,340	16	9	582	0	3
1908	2,772	3	6	518	7	10	518	9	0	1,735	6	8
1909	2,678	8	0	501	7	10	1,160	1	9	1,016	18	5
1910	2,635	2	0	527	14	6	506	15	7	1,600	11	11
1911	2,987	14	0	529	7	11	439	5	11	2,019	0	2
1912	2,634	15	4	542	18	11	1,269	16	5	822	0	0
	£69,644	19	10	£11,713	3	7	£18,946	1	8	£38,985	14	7

Outgoings are 45·4 % of Rent Received.

TABLE IV.

COMPARISON OF RENT OF FARMING TENANCIES (ORIEL COLLEGE).

	Acreage.			Rent.			Rent per acre.			Percentage of Reduction.		
	1876–7	1890	1912	1876–7	1890	1912	1876–7	1890	1912	1876–90	1890–1912	1876–1912
	Acres.	Acres.	Acres.	£	£	£	£ s.	£ s.	£ s.			
Oxon.	181	188	188	286	224	215	1 12	1 4	1 3	22	4	25
Oxon.	1,298	1,302	1,315	1,880	940	805	1 9	0 14	0 12	50	14	57
Berks.	2,183	2,184	2,175	3,740	2,148	1,941	1 15	1 0	0 18	42	10	48
Oxon.	789	834	830	1,585	1,054	816	1 18	1 6	1 0	33½	23	48½
Oxon.	180	180	180	332	245	220	1 17	1 7	1 5	25	10	33
Oxon.	119	119	119	270	175	130	2 6	1 10	1 2	35	26	50
Somerset	321	317	331	646	443	350	2 0	1 8	1 1	31	20	46
Kent	158	158	158	233	130	117	1 9	0 16	0 15	44	10	50
	5,229	5,282	5,296	8,972	5,359	4,594	1 14	1 0	0 17	40	14	48

This calculation allows for the change in the payment of tithe by adding the tithe average in the years in which the tenant paid the tithe to the rents.

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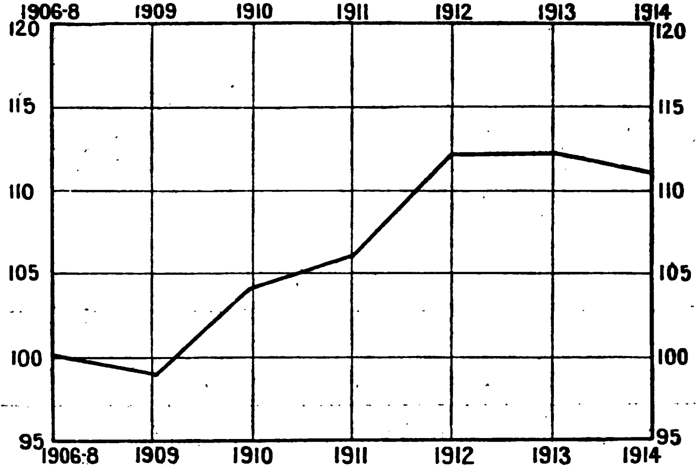
Taking the first two and the last tables together, one conclusion to be drawn from them is that so far as rents are concerned the improvement in agriculture has shown negatively rather than positively right up to the end of the period, the arrears and abatements on the one hand constituting inconsiderable items since 1897, while the rents received on the other have increased by little or nothing even during the most recent years. This fact is brought out more clearly by a comparison of rents given in Table II during short periods. Thus taking the eight and a half years from the middle of 1876 to the end of 1884 the average rents received each year were £9,030. For the ten years 1885–94 they were £7,409, for 1895–1904 they were £6,970, and for 1905–14 they were £6,963. If the administration of Oriel College estates is typical, this fact would go to prove, what has been frequently stated by landlords and agents, that if rents were not reduced promptly and substantially enough after 1879, they have not been increased any more rapidly in a time of rising prices. It is not urged, of course, that two practices, both out of harmony with economic conditions, constitute a sound economic policy. All classes of agriculturists agree that it is desirable that their reciprocal relationships should be shaped closely by economic movements.

In this connexion landlords and agents frequently expressed approval of the principle of tithe-rents, under which rents moved strictly in accordance with the movements of corn prices. If this system was ever largely adopted, it has gone almost wholly out of fashion. One objection to it is that corn forms a comparatively small part of the output from land in England to-day, and that corn prices, therefore, would be no reliable indication of the total production. A beginning, however, has been made by the Statistical Department of the Board of Agriculture in presenting information which complements that published by Mr. Price, information which provides a comprehensive basis for forming judgements on these matters.

GENERAL INDEX NUMBER OF PRICES OF PRODUCE SOLD OFF FARMS IN ENGLAND AND WALES, 1906-1914



In vol. iii of *Agricultural Statistics* for 1913 index numbers of prices were fixed for seventeen groups of produce from the years 1906–8 to 1913, showing the variations in prices from year to year. The explanation of the index number is best given in the following extract from the volume itself:

> 'The saleable products of the farms of England and Wales were classified in seventeen groups, and each group was given a "weight" (shown in brackets in the table) in the calculation approximately in proportion to its relative importance in the total output. The year 1908, being that to which the calculations of Agricultural Output mainly related, naturally suggested itself as the most convenient "base" or standard, but the objections to the adoption of prices for a single year became apparent when the calculations were made, and eventually it was decided to take the average of the three years 1906–8. This enabled a better level of prices to be obtained, especially for crops such as hops, hay, potatoes, &c., which vary greatly in value from year to year. The "weight" to be given to each commodity in calculating the index number was determined by the average value of the total sales off the farms in each of the three years at the prices then ruling. The calculation of the average price in

each year was made mainly from the Board's weekly returns on the general principle of including the market quotations for that part of the year in which the particular commodities are mainly sold by farmers. The commodities having been thus arranged in an order of relative importance from the farmers' point of view, the index number of each subsequent year was calculated at the current prices, and the rise or fall in value shown for each, while the index number for the whole of the commodities gives a measure of the general change of the price-level at which the year's agricultural output was realized.

TABLE V.

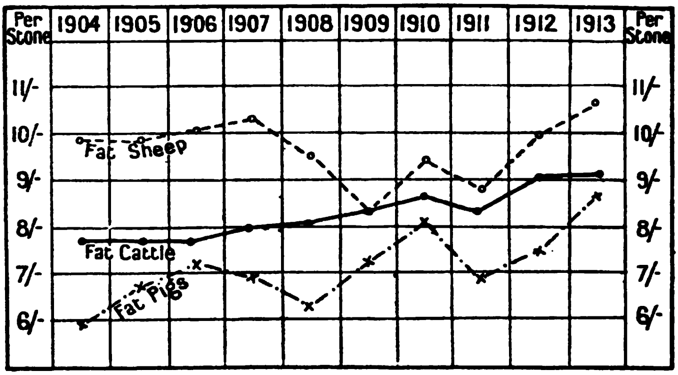
INDEX NUMBERS OF PRICES OF THE PRODUCE SOLD OFF FARMS IN ENGLAND AND WALES.

Average price, 1906–8 = 100.

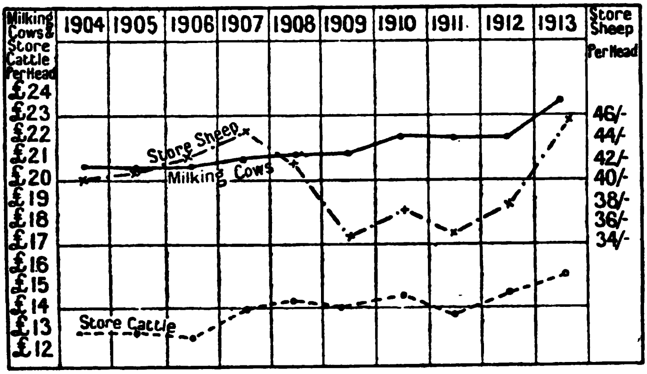
Commodities.	1906–8	1909	1910	1911	1912	1913
Cattle (25)	100	105	109	103	113	115
Milk (21)	100	100	100	106	109	106
Sheep (13)	100	81	90	87	100	106
Pigs (13)	100	105	119	100	109	126
Hay (11)	100	92	104	111	132	108
Wheat (8)	100	108	100	107	107	101
Barley (6)	100	104	95	119	118	112
Potatoes (6)	100	80	96	111	124	98
Poultry and Eggs (4)	100	106	104	102	107	109
Fruit (4)	100	71	112	108	103	119
Wool (3)	100	106	110	112	113	132
Butter (3)	100	100	101	105	106	105
Oats (2)	100	101	95	114	115	103
Hops (1)	100	185	127	252	146	220
Cheese (1)	100	96	95	105	110	101
Beans and Peas (1)	100	112	113	103	110	103
Vegetables (1)	100	121	103	134	125	111
General Index Number	100	99	104	106	112	112

It is to be noted that the "weight" attached to each group is based not on the total production, but on the proportion thereof which was estimated in the Agricultural Output report as sold off the farms, excluding sales from one farmer to another. Thus of certain crops, such as hops and wool, the whole, and of others, such as wheat and potatoes, nearly the whole, is marketed, whereas in some cases, such as hay and oats, the proportion of the total crop sold is relatively small.

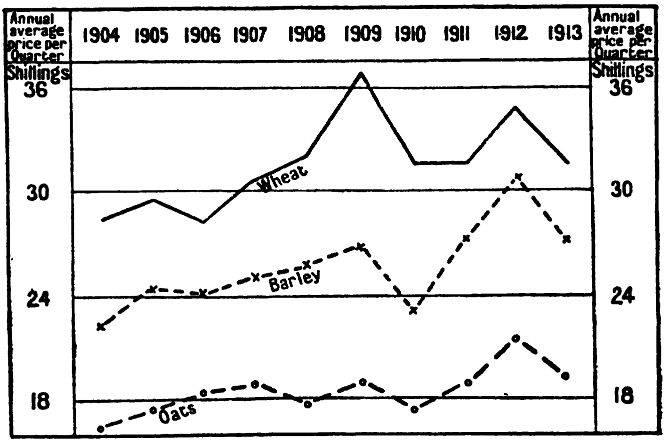
AVERAGE PRICES OF FAT STOCK, 1904-13



AVERAGE PRICES OF STORE AND MILKING COWS 1904-13

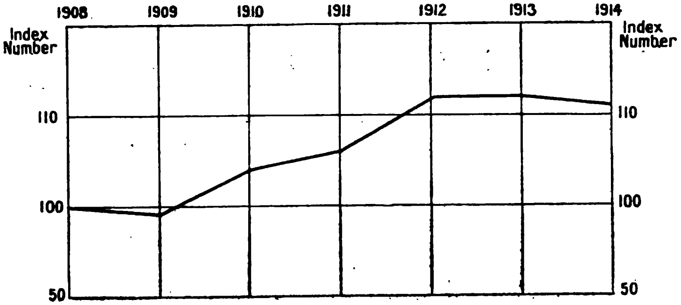


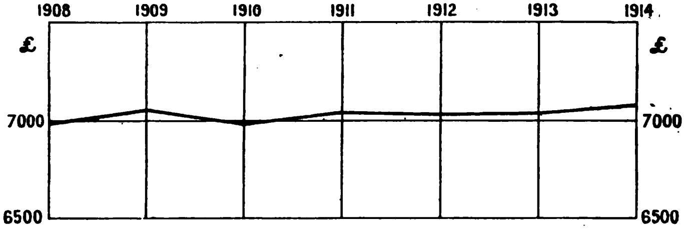
AVERAGE PRICES OF WHEAT, BARLEY, AND OATS 1904-13



The variations in the value of particular commodities is in many cases considerable, but on the whole the last four years have shown a marked rise on the price-level of 1906–8, the years 1912 and 1913 being in the general result equal, although the producers of different classes of crops and live stock were diversely affected.'

The following two diagrams, prepared on the same scale, provide a basis for comparing the movements of the prices of all agricultural products and of the rents of Oriel College Estates:


MOVEMENTS OF PRICES OF AGRICULTURAL PRODUCTS 1908-1914


ORIEL COLLEGE RENTS DUE

To get a complete view of the farmers' position it would be necessary to ascertain the variations in the cost of producing the different things which they send to market. At present there is no reliable information available on this point, general estimates furnishing the only means of arriving at any conclusion.

CHAPTER VII

THE ADMINISTRATION OF LAND

THE necessity for equipping land with buildings of some kind arises almost as soon as cultivation begins. The cultivators must be housed, and enclosures must be made to prevent their live stock from straying. At an equally early stage division of the land for the purpose of facilitating its working becomes desirable, the configuration of the country, the variation in soils, and the convenient management of cattle and sheep suggesting the form of the division. With the progress of agriculture this work requires to be done over and over again, and on an improved standard each time, since farming must keep pace with the heightening demands made upon it for the production of more and better commodities. Permanence is never absolute in this respect, and the manner in which these things are done has an important influence on agriculture, affecting its development in a fundamental way.

In Oxfordshire as in other parts of England the holdings bear traces of the different systems under which their improvement has taken place. The manorial system has left its marks in the large number of fine manor houses, the open-field system in the farm-houses and cottages grouped together in villages and in the long and rather narrow shape of some farms, and the modern system in houses and buildings placed near the centre of the holdings. There is much that is admirable in all these arrangements, in the inclusion, so far as is necessary and possible, of different kinds of soil in one farm, and generally in the convenient situations of houses. For the excellence of these things credit must be given to the intelligence and foresight displayed by earlier generations. Some farmers expressed the view that neither of these faculties had been exercised to any extent, but that things had ordered themselves in a haphazard manner.

There are probably reasons why this view should be entertained by the present race of farmers. The administration of land varies in efficiency not only on different estates but in different generations. Farmers of to-day have not fallen on a time when things have been done well. Owing to the depression at the end of last century, it seemed to be the wisest policy for most landlords to spend as little as possible on equipment, and to allow new divisions and groupings to be undertaken more with the object of saving expenditure than of securing the best combination of soils and convenience of working. Men who have seen how slight has been the consideration given to these matters are ready to conclude that they were always thus managed. This is not the case. There have been times when the interest in agriculture was sufficient to carry through improvements which have served the industry well, times when the handsome houses were built, when corn was a more profitable, if a smaller, crop, and the great, old barns were erected to hold it, when bullocks did more than pay for their food, and the large sheds were put up for their accommodation, when agriculture generally was prosperous, and most things necessary to secure its advancement received attention. During the thirty years 1880–1910 no great contribution to this work was made, and at present the enterprise which might have been expected to follow the improvement in prices which began about 1906 has been slow and irregular by comparison. The ground that was recently lost, therefore, has by no means been fully recovered.

Besides the matter of equipment the administration of land involves the exercise of some supervision over farming on the part of landlords. This supervision may be said to attach itself to their position both in the form of a right and of a duty, having not only an historical basis but resting on the economic demands of the industry. There is, perhaps, no more difficult work in the management of an estate.

The equipment of land which falls to landlords embraces the erection of houses, cottages, farm buildings, and fences, the provision of water supplies and of some part of field drainage. These various forms of equipment differ with regard to the periods for which they last. This is due partly to the manner in which the work was originally carried out, and partly to the nature of the subjects themselves. Farm-houses in Oxfordshire are generally good, so many of them being old manor houses, which, besides being well-built and commodious, have had an influence in keeping up to a desirable standard the dwellings more recently erected. Changes in the direction of rendering the internal arrangements more modern are occasionally necessary, but this does not involve a large expenditure. With farm buildings, on the other hand, alterations are more frequently required, since they must be adapted to meet changes in the use of the farm. Thus some of the old barns are as handsome as the houses in their way, but it is seldom that their vast space, especially that afforded by their height, is occupied. Owing to the custom of using stacks, and, in a few cases, Dutch barns, the old buildings are obsolete. The most urgent demand to-day is for modern cow-sheds, and this involves new buildings or a reconstruction of old, a larger undertaking than anything that is required for the accommodation of the farmers themselves. While the majority of houses in every part of the county are good, there are exceptions, instances in which they are dilapidated and inadequate. These are mostly found in South Oxfordshire, where the farm-houses sometimes approach the cottage type in their style of architecture, their size, and state of repair.

Unfortunately the cottages are less uniformly good. Farmers spoke of the disadvantages it was to have inferior cottages, because labourers who came from districts where the accommodation was good occasionally refused to enter the poor dwellings, and they were thus deprived of the best class of labour. In some parts of the county the cottages are excellent, but even in these places it is a general complaint that there are too few of them. Farmers are almost unanimous in the view that the efficiency of the men would be increased by an improvement in the cottages. Where holdings have been thrown together labourers in some cases have fallen heirs to farm-houses, but the result is unsatisfactory for the people as well as for the houses since they are unable to furnish and occupy these fully.

Farm buildings, perhaps, share the defects of the cottages to a greater extent than they share the excellence of the farm-houses. Imperfections are more common in the Chiltern district, in South Oxfordshire, east of the Cherwell, and between Heyford and Chipping Norton, and in the first three districts the failure chiefly consists in the want of adaptation to the growing demand for modern cow-sheds to give farmers an opportunity of dealing with the milk business, while in the last the farms seem never to have been properly equipped since the land was enclosed. But even in connexion with the work of feeding bullocks the arrangements have serious faults. With regard to the yards where the bullocks are fed and where the straw is trampled into manure, every one who knows a little about farming and manures has lectured the farmers and landlords about the waste that goes on. It may seem tedious and unnecessary to refer to the subject here, but as a matter of equipment it is too important to omit. At all times manures of high efficiency are difficult to get, and the present war has accentuated the difficulty, and caused farmers to look round for some substitute for imported potash. Those men will fare best who have the largest supplies of farm-yard manures with its all-round virtues in full strength. Without exaggeration it may be said that the bullock yards where this is made and collected are absurdly arranged to serve the purpose. In most cases they seem to be constructed and situated rather as ponds or reservoirs to receive the water from quite wide catchment areas, their contents being submerged or swimming for a considerable period each winter. The actual loss is bad, and the untidiness associated with these conditions must also have a prejudicial influence on other sides of the management. Being essentially a matter of equipment and the defect being so general an adequate remedy must come from the administrators of land.

In connexion with the arrangement of buildings several cases were mentioned where, although substantial and convenient in themselves, they were awkwardly placed with reference to each other, and, therefore, with reference to the proper working of the farm. In one instance a square of well-built sheds had been erected at the foot of a slope, and the sheds on the low side of the square were flooded in wet seasons. Another alleged defect of this kind was referred to by a large farmer. In his yards the sheds, under which the bullocks sheltered, faced north and west. The permanent disadvantage of this was considerable, and should have been obvious to the architect. Such cases indicate that agricultural architecture does not always provide facilities in the particular ways which the industry demands. Comments to the same effect were made by farmers on schemes of drainage which had been carried out within recent years.

There are two requirements in connexion with the production of milk which may be regarded as essential. The floors of the cow-sheds ought to be sound and comparatively smooth, and there should be an abundant water supply. But in many cases there are no properly constructed floors at all, and in others they are formed of cobbles, too rough to permit them to be kept clean. Some farmers have laid concrete floors at their own expense, incurring an outlay which ought hardly to fall on them.

But lack of water is the most serious drawback in this matter. As in most parts where the country is comparatively level the supply of water for the use of cattle comes from ponds. In spite of their stagnation and unattractive appearance, overgrown as they are with green weeds, the cattle drink from them and seem to continue healthy, and, indeed, certain people believe that there is some virtue in water which appears an appropriate nursery for disease, that the cattle themselves appreciate it. Cows, at least, do not support this view, as one farmer in the Chiltern district discovered. His ponds furnishing a somewhat uncertain supply, he had pipes laid on from Goring water scheme, and had troughs placed in the fields. The cows proved so fastidious that, once having tasted the pure water, they never returned to the ponds. Although no particular disease may be traced to those receptacles of muddy water, it is reasonable to believe that the general health of the animals must be better where they are able to satisfy their wants in the manner most agreeable to their tastes.

Unless it be the presence of water in the fields where it is not desired, there is perhaps no single disability which retards the progress of farming so much as the inadequate water supply. Notwithstanding the enterprise of some landlords and farmers who have initiated and carried through schemes in different villages the greater part of the county is badly served. Each farm has generally its own supply. If a larger demand is made on the wells, they must be sunk deeper. The expenditure is heavy. Landlords are often financially weak, or, to use an expression which is more comprehensive, they are economically inefficient since lack of interest may prevent them from acting in some cases. It is a question worth considering whether this method of getting a separate water supply for every farm is the most consistent with sound economy, or whether, in a part of the country where rivers and streams are numerous, these should not be treated as the sources of supply, and whether public authorities should not undertake the collection of water and its distribution to different districts, disregarding county boundaries, and adapting schemes to the configuration of the country.

With reference to equipment in these respects criticism can hardly be too strong. It is unnecessary to approach existing conditions with any theories or ideals in order to have a standard by which to judge them. Conditions in one part of the county are a censure on those in another. The equipment of most farms to the west of the Cherwell condemns the equipment of too large a number to the east and south. It was enough to meet a farmer in the north-west on his return from a visit to friends in the south-east, the centre of the milk-producing district, and to hear him say that he could not possibly work the farms there with the existing buildings. Only a few people responsible for keeping this branch of farming abreast of the demands being made upon it seem to have realized and fulfilled the conditions necessary for its development, yet it is a field which offers wide scope as well as satisfaction on the financial side. If anything sufficiently extensive is to be accomplished, if anything like uniform efficiency is to be achieved, landlords are more capable of initiating and carrying through improvements on a general scale than tenants. In this development the connexion and co-operation of farming in the progress towards a more elevated standard of national life are felt. A few farmers have encouraged the demand for milk delivered under pure and hygienic conditions. It has been pioneer work, the effect of which will be an improvement in the health of the nation and in the general amenities of life. Oxfordshire by its situation and by other circumstances is fitted to serve as a basis for this work, and every one interested in its financial and general success ought to take fuller advantage of this opportunity.

One difficulty which occurs in the adaptation of buildings was mentioned by agents. They complained of their experience with tenants, that occasionally the latter had insisted on the conversion of buildings erected for other purposes into cow-sheds, or on the erection of new ones, that after a time they had given up the farms, and their successors would not continue the milk business. The matter, however, is simply one of administration, and falls for decision to the landlord or agent. From a reasonably careful survey of economic conditions they ought to be able to tell whether the demand for milk justifies the conversion of one or more farms to this purpose from any other. Where administration is efficient the uses to which the farms are put will be in harmony with the demands of markets, and this is not a matter to be determined by tenants, even if they support their claims by attractive offers of rent. Too often, perhaps, this practice has had the deciding influence, and it must occasionally prove unsatisfactory, because it is economically unsound.

While the problems of buildings and of a water supply are most acutely felt in districts where dairy farming has developed, the problem of draining affects every part. There are considerable areas on which the presence of water defeats or neutralizes the efforts of farmers to grow crops. Clay, stone brash of a heavy or 'sour' kind, and even lighter soils resting on stiff or impervious layers of subsoil, hold water to an extent sufficient to impede all forms of cultivation. These kinds of soil occupy a large part of the county, and therefore the evils arising from imperfect or neglected draining are widespread. Most of the drains laid with the assistance of Government loans in the middle of last century are useless, being too deep, and the work must be done over again. The damage is done by surface water, and the drains must be near enough the top to draw this off, since it takes a long time to percolate through an unbroken layer of stiff soil. As in other parts of the country the most general arrangement in making this improvement is for the landlords to provide the tiles, and for the tenants to find the labour necessary to lay them. Little schemes have been carried through, and according to the testimony of farmers they have been successful, no form of expenditure giving a more immediate and satisfactory return. For some reason the system of mole drains does not find much favour in spite of its lower cost, although it might be expected to work well on clay soils.

Associated with this division of responsibility, this co-operation, between landlords and tenants is the difficulty of getting an efficient partnership. Deadlocks frequently occur, since the progress of any scheme depends on agreement between the parties. There were said to be several landlords who could not or would not invest their capital in the equipment of farms, when farmers were willing to pay interest at 5 %, or, as was stated in one or two cases, at 6 %. On the other hand, there are farmers who refuse to pay interest even on improvements which they consider necessary for working their farms. They consider that when they have agreed to pay a fixed rent, this should cover everything in the way of reasonable equipment. Landlords seem to be deterred from investing their capital by some vague fear lest a concession should involve them in uncontrollable and unprofitable expenditure, and it was said that they considered it undesirable 'to lock up their capital' in further improvements, this conviction also arising from a vague misgiving, perhaps from their experience during depression, or from a general belief that money invested in other things gives a better return. Farmers on their side object to the system of paying interest on each new improvement, seeing in this process the possibility of having their rents raised by a series of increments in respect of the improvements, while there is no prospect of a compensating reduction with reference to deterioration. With regard to the landlords' financial diffidence, it seems not too much to say that it is largely due to imperfect knowledge of the financial possibilities of agriculture. The hitch between them and the farmers arises from misunderstanding, and frequently from distrust, from submission to a too rigid system of determining payments under which people are dragged into positions that are economically insupportable. Instead of allowing a kind of financial fatality to coil itself round one or other until he is financially strangled, landlord and tenant might come together and arrange what is reasonable in view of the economic demands of the position. For landlords and farmers to regulate their relations by fixed and irrevocable arrangements is no more wise than for sailors of light craft to tie their sails in a gale. As it is, when farmers who have resolved that under no circumstances will they pay interest in addition to the agreed rent, meet landlords who make it a rule not to spend money without getting interest, improvement is apt to be delayed.

When Arthur Young made his survey of agriculture in Oxfordshire in 1807, he advocated two things with characteristic enthusiasm—the enclosure of commons and the hiring of farms on lease. This latter system had its vogue until thirty years ago, but the depression has done much to render it a comparatively rare thing. There are leases to-day, but most of the farms are held from year to year. Both landlords and farmers prefer this, having found by experience that there is too little freedom, too little possibility of give and take, under agreements for long periods.

Intimately connected with the work of equipment is that of supervision. In choosing tenants, and in transacting business with them during, and at the termination of, tenancies, landlords and agents have a task which is often delicate, and which requires discretion and tact for its successful performance. To find a suitable tenant for a vacant farm is not always easy, even if twenty or thirty people offer themselves. The proportion of farmers who may be regarded as efficient by reason of their capacity for management and their command of capital is not universally high, and where it is low, the endeavour to improve matters must be undertaken with caution. As things stand at present the atmosphere is not favourable to such work. Farmers dislike any criticism of their methods, or any reference to them, by landlords or agents. There is a feeling of jealousy, as if interference had been arbitrary, as if the right of displaying interest in the management had been pressed too far, or in a wrong direction, in the past, and farmers are unduly nervous if it is exercised at all.

The form of estate management which appeals most strongly to tenants is that of the Colleges, Ecclesiastical Commissioners, and Crown. These bodies have earned a reputation for reliable administration over a longer period than any private estate. The continuity of their policy inspires confidence in the farmers, and if an estate is to be sold, there is a generally expressed desire on the part of tenants that one of the Colleges may purchase it. Security is the condition which they seem to prize most, and under corporations they obtain this in a satisfactory form. In districts where the estates of these bodies occupy the greater part of the area, the standard of farming is generally higher.

Under the administration of so many Colleges, security may admit of varying degrees, but tenants find that this is almost uniform. The work of equipment, however, is performed differently by different Colleges. Some are less enterprising, and in such cases the management of the farms shows evidences of sluggishness, secure tenure in itself not being sufficient to counteract the influence of poor buildings and the indifference of which they are partly the expression.

The importance of this department of agriculture may certainly be exaggerated, but after the most careful and circumspect review of conditions and of opinions offered by all classes engaged in the industry, it is impossible to escape the impression that its influence is fundamental. Merely from the appearance of the country it is possible to realize how much depends on the proper administration of land. Farmers are immediately responsible for its cultivation, for evolving systems of management which determine the amount of production, but they themselves and their policies are moulded largely by the wider environment of administration, which may act as a stimulus or as a discouragement. The success of agriculture depends on several factors. These are chiefly economic. What are regarded as defects in soil and climate frequently cause loss and disappointment, but if the men engaged in developing the different branches of the industry were to fill their parts more fully, and were to stand by each other, these physical difficulties could be made less formidable. The human machine itself might work more efficiently no matter what the material obstacles in its way may be.

An improvement in this respect can be achieved through the department of administration. This is, indeed, the most appropriate avenue by which to introduce new activity into agriculture. The importance of the work has not been sufficiently appreciated. It is hardly too much to say that it has seldom been regarded in its purely economic significance at all. The administration of land is work which calls for very high qualities and acquirements in the men on whom it rests, since it involves the handling of people in circumstances which make them sensitive and often suspicious, where the motive which leads them to seek the improvement of their material well-being is active, Besides requiring such qualities in administration the work calls for more actual attention on their part. From the financial point of view there would be an ample return for its more thorough prosecution. With regard to the people who might undertake this task, it may be assumed that no one is too good for it. Nevertheless there are some owners to whom it is uncongenial, and others to whom comparatively small estates offer too narrow opportunities. And there are many whose other avocations absorb practically all their time and energy. Things cannot be in this respect what they were centuries ago. If conditions are recalled, such as they were when the military, legal, and social life centred in the manor, or in some organization with hardly a wider area for its basis, when the interests that offer the fullest life to landlords were concentrated on the estates from which they drew their incomes, when military or political duties which took them from home provided too little scope to keep them long away, it will be realized what changes have taken place. There has been a steady if slow division of interests, and a development of each of these on a national, imperial, and even world-wide scale. Greater specialization has been necessary in every calling, in the Army and Navy, in law, in diplomacy, politics, and in business concerns based on international operations, and each one of these callings has been followed exclusively by one or more Oxfordshire landlords, a predecessor of whom would have undertaken to fill them all as they existed in his day, and to manage his estate at the same time. Thus landlords are not and cannot be present on their estates as they once were. It is perhaps not too much to say that they will never be present again with the same intensity of interest which they once displayed. The gradual and inevitable absorption of their thoughts and energies in other pursuits which have appealed to them has produced an attenuation of the interest which they bestow on agriculture.

Specialization, subdivision of pursuits, have produced the same results everywhere. A slow and almost imperceptible but far-reaching evolution has been going on. In some cases it has been a distribution of the landlord's interest, and not its concentration on any one pursuit, which has caused its weakening with reference to agriculture. But whatever the cause, there is not the slightest doubt that landlords as a class have been drawn away from the more intimate places which they once occupied in the administration of land, in the development of this industry, and it would be contrary to everything that is reasonable to assume that their withdrawal has not left its organization materially weaker.

Besides those who have been attracted wholly or partly into other callings, and whose interest in their estates is too slight or intermittent to grip and influence their administration effectually, there are landlords more unfortunately situated, people who, owing to financial difficulties, suffer a kind of economic paralysis, unable to take any initiative in expenditure, doing nothing beyond receiving a stationary or diminishing rent, most of which is probably paid away in discharge of obligations. This is a state of affairs which is universally deplored. Prolonged inactivity in such cases weighs heavily on the management of farms, and seriously lowers the standard of cultivation. On many holdings the economic forces actually present would carry an enterprise to success, if by some rearrangement they were allowed to operate.

So far as there is any ground for the charges brought against agriculture of being a backward industry, the backwardness has been due in considerable measure to the relative weakening in administration. Progress in farming depends on progress in the administration of land, to some extent springing from it, and never going far without it. The increased specialization in other industries, the concentration of interest in every branch of them, have not had their counterparts in agriculture. The organization of those industries has been rapidly developed, landlords themselves having been attracted from their estates to take part in it. This has placed agriculture at a disadvantage in two respects. It has suffered by the loss of the landlord's interest, and relatively in the matter of labour and capital, since industries organized with greater efficiency and energy are in a position to offer more powerful attractions to labourers and capitalists.

Reference has been made to the influence of the depression in estranging landlords from the business of estate management. This was considerable, but apart from it the present situation would have arisen from deeper and more permanent movements. The segregation of interests was inevitable, and it was also inevitable that many landlords should follow the branches other than agriculture into which their original composite vocation divided itself. This process has gone so far that agriculture has been left relatively, at least, in a looser and less organized state than ever before. The problem is now to restore and increase the efficiency of its administration. Landlords have gone out of the industry, and nothing adequate has been done to fill the places which they have vacated, to supply the economic force which they once contributed. There are difficulties in the way. This ancient industry, in simpler times the centre of a group of activities which supported the national life, is still surrounded by the débris of the old system under which they were all organized together, but which has been so largely dissolved. The habits and methods which belonged to this primitive order of things cling to the organization of the one activity which remains, and must remain, distributed over the country, and surrounded more fully by old associations than the other activities which have betaken themselves to fewer centres.

There is no reason for assuming, as is frequently done, that agriculture by its very nature fails to provide a basis for organization similar to other industries. They fall into the same category and become subject to the same laws, because they are all economic pursuits, all forms of human activity directed towards the production of wealth. The difference between the organization of agriculture, the organization of weaving, engineering, or the manufacture of steel, is not due to the fact that it is more subject to fluctuations and uncertainty which affect its prosperity, but to the fact that the principles of organization applied in other cases have never been applied to it, that as an economic activity it has never been granted the economic conditions necessary for its development. Until the application of these principles is established as the chief object to be pursued there cannot be the indispensable concentration of energy which gives satisfaction. The mere setting up of a clear and definite aim will remove misunderstanding, even if success in its attainment must always be partial.

A growing share in administration has been assumed by national and local governments, but this does not mean that unqualified progress has been made, since some things which are essential for the proper development of farming seem to be less well done than they once were, and the injury consequent on this neglect is considerable enough to raise the question whether, after all, the assignment of certain tasks to the different classes is in harmony with economic possibilities and needs. Thus the responsibility for keeping hedges and ditches in order has fallen by custom on farmers, and to-day the work is inadequately done. The inability of farmers during the depression to do everything consistent with good cultivation led to the postponement of operations such as this. But even these more prosperous times have not seen much improvement, and the nature of the work, intermittent in its call for attention on any one holding, and at the same time requiring skill and aptitude for its performance, suggests that those who undertake it should have more special qualifications. If farms were larger and better organized, the work might be more regularly done. In some districts there was a man, or perhaps more than one, who devoted himself exclusively to such work as draining, and who may have kept a band of men under him. But as the demand for their services diminished, their numbers grew less, and farmers regret their disappearance. Whatever was the reason for allotting the performance of this work to tenants, it seems more properly to form a part of administration rather than of farming. An estate embracing a number of farms might provide employment of this kind for a few men throughout the year, and these would be more efficient than others who might only be engaged in it for short periods with long intervals between. The Oxfordshire County Council keep an instructor in the art of laying hedges, but even if one man on each holding of a certain size is partly trained, he can hardly get sufficient practice to keep himself expert. The first requirement is perhaps an adequate appreciation of the necessity for performing this work on the part of landlords and councils. Some special encouragement might be necessary to begin with, but there is certainly an economic basis for the support of a distinct class of labour engaged in doing nothing beyond the work of equipment.

There will always be enterprises the management of which at any given time may seem to lie doubtfully between individuals and associations of some kind, the latter in most cases being public authorities. With progress a continual transition goes on, the farmers themselves by the increase of their production being the cause of this. The carriage of farm produce, for instance, becomes more important as its amount and value grow. Every farm is still far from being a factory in the matter of its output, but with the practice of buying larger quantities of feeding-stuffs and manures, this increases, and on two sides, therefore, the work of transport extends. Farms cannot, like factories, be placed beside railway lines, and their comparative isolation in certain districts renders some greater facilities in transport necessary if more active methods of farming are to be made profitable. In the Thame district the milk trade already supports a motor service to Aylesbury, and in other parts of the country the possibilities of production would justify similar schemes. Agriculturists could do more in the way of economizing by the organization of certain services through voluntary associations or through public authorities. These are useful bodies when people understand how to use them.

CHAPTER VIII

FARM MANAGEMENT

THE son of a Yorkshire manufacturer, who was living as a pupil on an Oxfordshire farm, confessed that he was disappointed to find how low were the profits made in agriculture compared with those received in industries with which he had formerly been associated. Farming still attracted him in many ways, but the discovery of what he believed to be its meagre financial promise had caused him to reconsider his choice of vocation and had cooled the ardour with which he had entered on his career. Many people who are specially intimate with agricultural conditions, and who, at the same time, have considerable experience in the financial management of other industries, do not agree with his conclusion. Their view is that, for some years now, a given amount of capital invested in farming yields on an average as great a return as an equal amount invested in other businesses. So far as there is a difference of opinion, it is probably due to the fact that each of the various parties fails to understand what the other means.

The financial aspect of agriculture has engaged the attention of people in every class. Higher returns from the industry are wanted—first of all for the labourers, then for the farmers, for the landlords, and in Oxfordshire not least for the rating authorities, who regard the low rateable value and the small sum raised by a penny in the pound as serious misfortunes. There is, therefore, a general desire to see an increase in agricultural production, a general conviction that this is possible in large measure, and a widespread activity on the part of public-spirited men and women to secure this result. In the two previous chapters certain arrangements have been discussed which explain to some extent why financial success has not always been attained. From one point of view these arrangements seem so far-reaching in their influence that they might be held to account for all lack of achievement. But it would be unreasonable to assume this. Several classes participate in the work of promoting agriculture, and each of them contributes something that is indispensable to its success. This being the case it may seem invidious to assign degrees of importance to the parts played by the different classes. Nevertheless these vary in this respect, and the duties of the farmers may be regarded as the most responsible. Landlords and governments place capital at the disposal of farmers. They themselves bring capital of their own of which they have the management, while labourers come under their direction. Farmers are thus given the central and pre-eminent position in the organization of agriculture, being placed in command of a machine, enjoying the privilege and bearing the responsibility of keeping it going, and of deciding the direction in which its powers are to be applied. Men occupying similar positions in other callings have been described with considerable appropriateness as 'captains of industry', a title not yet conferred on farmers.

Subject to the fact that they are not sole masters of their relations with other classes, and that in their association with landlords these have the dominating influence, there is reason to expect from farmers the largest contribution to any advance in agriculture, and there is, therefore, justification for the habit which critics have acquired of seeking in their methods an explanation of any failure to make progress. Criticisms take two forms, although fundamentally they may resolve themselves into one. The first is that most commonly brought by farmers against their own class. They have too little capital, or 'strength', to use their more expressive colloquial term. This may be considered their misfortune rather than their fault, but it is altogether in the latter sense that it is referred to here. Occupying such a position they ought to have sufficient capital to fill it adequately. The other form of criticism is more frequently adopted by people outside the industry. They impugn the capacity of farmers as a class. Owing mainly to the fact that wages in the county are low this kind of criticism has been common. Two statements have recently been made by authors who have derived their views largely from a study of conditions in Oxfordshire extending over a number of years. Mr. Reginald Lennard has devoted a volume to the discussion of agricultural wages. His conclusions are not summed up in one or two sentences, but they are none the less definite because they are conveyed in the course of extended reasoning. 'There seems', he says, 'no reason to distrust the arguments which tend to show that farmers are in a privileged position, and, on account of the semi-monopolistic condition of their industry and the cheap labour they can obtain, reap, in proportion to their ability and the toil they undergo, exceptionally high profits. . . . The conditions which tend to shelter the farmer from the competition of urban business ability, and from the competition of the agricultural skill of members of the rural labouring class, enable the farmer to retain an exceptional advantage. But in the case of actual individuals at present engaged in farming, this advantage may mean, not that agricultural employers are pocketing a large income, but that men who would be unable to make any profit at all in the face of competition are, under existing conditions, making some sort of income out of the profits of their farming.'[1] Mr. Lennard attributes the low standard of production, and consequently low wages, to the inferior ability of farmers compared with that of capitalists and organizers in other businesses. He goes further, and argues that their inefficiency is due to the fact that they are secured in their holdings by a sort of hereditary privilege against men who have been trained in superior methods elsewhere, and who, if they were allowed to enter farms, would introduce better methods and more ability, and thus stimulate the practice of agriculture. If the privilege referred to were common, it would account largely for inactive management, but farmers would not admit its existence to any appreciable extent.

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[1] *Economic Notes on Agricultural Wages*, pp. 57, 60.

The second statement is made by Mrs. Sturge Gretton, also with reference to wages in the county. 'The labourer's standard of comfort and decency,' she says, 'like that of all other classes, has risen immensely. The factor that has stood still in the countryside is the average farmer's intelligence. Higher wages will no doubt have to be paid; and to pay them more will have to be got out of the soil than the methods of the present farmers get out of it.'[1] There can be little mistake about the meaning of this frankly expressed opinion, and it is good for farmers to remember that their achievements are watched with such interest. The agreement in the two statements about the farmer's ability and intelligence is significant, for it is an opinion widely held. It might be difficult to maintain the view that the standard of comfort and decency has risen, while the farmer's intelligence has remained stationary. The first of these depends so largely on the second that progress in the first presupposes progress in the second. It is always difficult to assess the capacity of individuals, and acquaintance with Oxfordshire farmers does not give the impression that they are less capable as men than members of other classes. Even if it be granted that there is a foundation for the reputation of backwardness which they have borne for some time, an explanation of this may be sought in more directions than one. Ability and intelligence are often present, although they are not permitted to develop and apply themselves, and perhaps the criticisms imply too strongly that there is an abnormal scarcity of these qualities even in a potential form.

Consideration of the question whether farmers have or have not made progress is perhaps the most promising method of ascertaining what is the actual state of agriculture so far as they are responsible for it. Although the distinction between them is superficial and difficult to maintain, it may be said that there are two kinds of progress, the one being imposed on farmers in an almost irresistible form, having really been made by others and embodied in tangible things like implements which they must use, and the use of which enables them to produce more, the other springing rather from their own spontaneous activity, and being more intangible in form. There are few industries in which the first kind of progress is more clearly illustrated than in agriculture. Its stages are marked not only in the improved implements which have been adopted from time to time, but in the manures, the seeds, and breeds of live stock which have come into favour. Reviewing these movements in Oxfordshire during the last century a vast change is noticeable. When Arthur Young made his survey in 1807, he published some twenty-four plates, showing the ploughs, harrows, drills, wagons, and other implements in use at that time. With the exception of the wagons, these have been altered and improved almost beyond recognition. No doubt in the interval individual farmers would continue to use implements of the old styles long after improved forms had been introduced, but in the end they would be compelled to give way, since tradesmen lose the experience, and cease to keep the material, for making and repairing that which has gone out of fashion. Progress, taking this hard and rigid shape, and being brought to bear on farmers, becomes necessity.

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[1] *A Corner of the Cotswolds*, p. 209.

A striking instance of this process is furnished by information which Young gives. Apparently at that moment horses were superseding oxen for traction purposes, as motors are displacing horses to-day, and what appears to have been a lively controversy was going on round the movement. It may seem strange, but Young warmly supported the use of oxen, and administered sharp rebukes to the people who were on the side of the horses. ‘One’, he says, ‘of the most interesting circumstances I met with in Oxfordshire was the increasing attention paid to oxen as beasts of labour. While the use of them has been going out in so many parts of the kingdom, and in so many others almost forgotten that such a practice ever existed, to find the use of them well understood, and every day increasing, was a spectacle which could not fail of giving me great pleasure. The speculative writers who labour hard to persuade their readers that this use of oxen is unprofitable, would do well to go to Burford, where they will find plain practical farmers, whose business is upon the largest scale, giving the preference to oxen.'[1] Oxfordshire farmers of that day seem to have lagged behind those in other parts of the country. But their successors have advanced, although so recently as twenty-five years ago it was the custom on a few farms close to the Cotswolds to keep one team of oxen which was engaged exclusively in ploughing the whole year round. If Young, however, with all his enthusiasm for oxen, were farming in Oxfordshire to-day, he would find it an extremely hard task to fight against progress, to get oxen for his teams, and men to work them.

Progress has similarly partly asserted itself and partly been made through the breeds of live stock. A century ago Longhorns seem to have been the most numerous class of cow in the county, Shorthorns being considered too soft by many farmers. Now the latter breed has established itself wherever milk is produced, and there is no doubt that the change has led to a much greater output. In the improvement of this breed, as in that of sheep, Oxfordshire farmers have played an active part, making a positive contribution to the advance.

So far, then, as the fruits of progress in stock-breeding and chemistry are within their reach, farmers make use of them. During this winter of 1914–15 a large number of motor ploughs have been introduced, the most common type being a machine capable of ploughing two furrows at a time, and of turning about three acres in a day. There are fourteen or fifteen milking-machines in use in the county. If there are men who do not possess the latest labour-saving implements for cultivating, hay-making, and harvesting operations, this is probably due to lack of capital or to the fact that farms are too small to make outlay on those things profitable, rather than to absence of desire for improvement. There may be certain minor practices the economy of which would be challenged by farmers in other parts of the country. It may be argued that the custom of using heavy wagons drawn by two or more horses to convey loads which are of no great weight to and from markets is unprofitable, that the two-wheel cart is a more serviceable and less wasteful device. The advantages on either side, however, often make such points so nice as to seem unimportant.

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[1] *General View of the Agriculture of Oxfordshire*, pp. 295–6.

In the matter of calling to their assistance what progress in its most general form has to offer, in their readiness to adopt the widest form of co-operation, farmers are perhaps as keen and alert as 'captains of industry' anywhere, and it is doubtful if a number of these, coming from other callings into agriculture, would make any considerable improvement in this respect. Nor would people with most experience deny that farmers are endowed with as much energy and intelligence as others. It is not as individuals, and it is not in their manner of co-operating with inventors, engineers, and chemists, that farmers differ from the directors of other industries. The difference which, in its results particularly, seems to lead to so many comparisons between them is the presence in these industries of a highly developed form of co-operation, and its almost complete absence from agriculture. There is little doubt that farmers themselves have accurately diagnosed their condition, it may be in a very general way. They lack 'strength'. Apart from what administrators provide, or fail to provide, for the development of their business, their own efficiency is constantly limited by the inadequate amount of capital which they bring to it, and keep in it. Capital does not come to them, as it comes to men in other undertakings, and could not stay with them, because they have never provided the form of management which would serve as a basis for co-operation between themselves and the people who have capital to invest.

While recognizing that farmers are by no means wholly responsible for this, it may be well to call attention to one habit which they might lay aside with profit to themselves and comfort to others. For a long time, less now than formerly, there has been a sort of jealousy between agriculture and industries which have prospered considerably during the last century and a half. The old industry seemed to feel itself injured by the comparatively rapid development of its younger brothers, and had a suspicion that the success of the latter was due to some special favouritism shown them by governments. When only a portion of the failure was explained by the treatment of governments, the caprice of the climate and even of the soil was brought in to account for the remainder. Agriculturists ought to rid themselves of this belief. There is no element in their business which excepts it from the economic laws which govern others. The fluctuations of markets and climate put together do not hit them harder than fluctuations of markets alone frequently hit men engaged in other businesses, and their habits of regarding themselves as stepchildren of the powers in heaven and earth does something to prevent them from achieving more.[1] Whatever has been done in organizing other industries can be done in organizing agriculture.

It is necessary to appreciate where the responsibility rests in this matter. When people speak about farming in any district, they generally refer to the appearance of the crops and to the quality of the live stock. If their interest is more than superficial, their minds go beyond these things to the farmer whose activities have given to the fields the appearance which they wear. For them the weight and quality of the crops simply reflect the character of the management and working. They see in them the kind of man the farmer is, and the kind of support he gets from administration. The thing which matters, which is final, is not the soil and climate but the men. One old farmer, on being asked where the best land in Oxfordshire was, answered: 'The best land is where the best farmer is.' This may be saying rather much, but it is undoubtedly true that the best farming is where the best farmer is, and not where there is the best land. If the face of Oxfordshire to-day has a more attractive appearance than it had 700 years ago, if the fields give to the men who look to them for their living a greater assurance that they will be well-fed than they gave to their ancestors and predecessors, the difference is not due to the soil, or to the climate, which, if reports are true, has changed little for the better; but to the fact that twenty generations of Englishmen have built up by slow and patient work a better and better system of getting out of the soil and climate what they want. The machine which the young farmer gets charge of to-day, in order to take produce out of any 400 acres of land in Oxfordshire, is a much more efficient thing, if he handles it properly, than the machine which was at the disposal of his predecessors.

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[1] Many instances could be given of manufacturers who have completely lost the market for their produce, and who have been obliged to retire from business, or to scrap their machinery and take up something entirely different. There is the silk trade, the chief market for which is Burma, and the manufacturing centre of which not so many years ago was Macclesfield. The first change took place when manufacturers in Glasgow succeeded in capturing the Burmese market, leaving the people in Macclesfield to adapt themselves as best they could; the next occurred about 1905, when Japan took the market from Glasgow. A more widely known case is that of the Coventry people who, for similar reasons, had to become manufacturers of cycles and motors after they had been accustomed for years to making ribbon. The business of farmers has never left them so completely as this, and therefore the changes in methods which they have been called upon to make have been less sweeping and difficult.

There is another point about which there is apt to be some confusion, some uncertainty as to the actual source of efficiency. More than once in the course of the survey farmers explained a neighbour's success by the fact that he had obtained capital through some turn of fortune, making a sort of indirect excuse for a poor achievement. This was probably due to hasty consideration of the subject. If farmers were asked in a general way to state the things which are essential to assure the success of a man entering a farm, they would probably reply that he ought to have sufficient capital and to know the business thoroughly. That is, they might assign the place of importance to the possession of capital. On further thought, however, they would almost certainly reverse the position, and agree that sound management was the primary and fundamental requirement, that, given this, capital would be available. That the two things are related as cause and effect becomes clear in cases where men come into farming with plenty of capital, and too often lose it, and again where men who have an aptitude for management succeed in adding substantially to their capital in the course of their careers. Whether this connexion between capital and management is implied in the word 'strength' as used by Oxfordshire farmers is uncertain, but it does suggest strong management as a whole including a wise policy as well as money to support it.

Assuming management, therefore, to be the first essential, there is one feature of it which is incompatible with the introduction of more capital into the business. It seems a simple and elementary thing to say that the condition which capital demands everywhere is security. There are 4,453 holdings in Oxfordshire, and in most cases the management depends on isolated individuals, and changes frequently within a few years. Such an arrangement has long ceased to be the basis for the development of the most progressive industries. Thousands of things that are done in manufacture and commerce would be impossible without the co-operation of a large number of men. Single individuals could neither accumulate, nor get command of, the capital necessary to carry through enterprises that are undertaken every day, and when business-like people contemplate the investment of their money in a scheme, they make arrangements under which it can be carried out to the very end, and from that would be excluded the system under which the whole conception and organization of the scheme would depend absolutely on one man who, for many reasons, might break down. In agriculture management is as changeable and perishable as an individual; in other industries it is gaining the stability and permanence which belong to a society. This difference in organization explains why capital goes to manufacture and commerce, and avoids agriculture. The single-handed engagement in farming is interesting, like the use of ox-teams, sickles, and threshing flails, but its merits, whatever they may be, are more than cancelled by its defects, from the point of view of securing progress and an increase of production. Under it there is a definite limit to what can be achieved in these respects, since continuity is so often broken. According to the general testimony of farmers security of tenure is an indispensable condition of development, but insecurity does not arise only from the relations of landlords and tenants.

The present system of management assumes a variety of forms, but two of these are typical of most. The first is a sort of combination of individual and co-operative action, the latter element being rather feebly represented; the second excludes co-operation so far as this is possible. If a farmer has sons, the single-handed principle is generally modified by the natural desire which leads him to associate them with himself in business, and by their reciprocal inclination to take up his calling. There is nothing unsound in such a duplication of relationships, for if the paternal and filial connexion is not allowed to prejudice the economic, there ought to be an advantage in their existence side by side. It is difficult, however, owing to the earlier association, for a father to appraise his son at his true economic value, and to give him a position in the working of the farm in harmony with this. The prejudice of the parent may influence the judgement of the business man, according as he over-estimates or sets too low a value on his son's capacity. Men in other callings get over the difficulty partly by sending their sons to learn their business in outside firms, where they have to prove their worth in economic surroundings unaffected by other influences. This custom is not common in farming. The continuity, therefore, of a form of management under this system, assuming that it has sufficient virtue in itself to continue, depends on its transmission from father to son. Statistics might be obtained to show how liable this transmission is to break down, how often a successor fails to grip the business left by his predecessor. But people with experience in agriculture will be able to form an estimate of the chances which favour and militate against the perpetuation of a good system.

The second form of management is found where there are no sons, pupils, or apprentices of any kind, who might be instructed, and, in cases which are too common, where there are sons, but where fathers are such all-sufficient and exclusive managers that even the slightest experience in this work cannot be obtained within the limits of their jurisdiction—where the actual estimate of a son's, a potential manager's, economic value gives him no position in which his capabilities may take root and grow. Managers of this type are generally clever and practical, but lack foresight and imagination. Their management during the prime of life is the subject of admiration. It is marked by energy and firmness. When their powers begin to fail, they probably awaken to the fact that something is wanting. They may become conscious that their exclusive activity has blighted all capacity for management in those around them, or has driven off those who could no longer exist without some exercise of their intelligence, and that they now live in the midst of an unproductive loneliness created by themselves. They know that the capital which they have in their farms, though it is still large in amount, yields a smaller return than it did when associated with the strenuous control and direction of which they are now incapable. But they cannot do anything to repair the weakness by calling in new energies to supplement their own. This would be to reverse the attitude they have adopted all through life, to root up habits of which they themselves are constituted.

These men, clever and clear-sighted within narrow limits and among material things, knowing better than any, perhaps, how to prepare a long time ahead in order to get the fullest crops all through their rotations, how to get the finest strains of live stock, fail to understand that the way to make these achievements permanent, to secure that the making of money will be prolonged beyond the term of their own greatest activity, is to make capable managers of their sons, and of as many others as give promise of learning, that the capacity for management is the most important thing to have about a farm, because it embraces all other things, and that they ought always to be producing it in order to have a reserve. Certain conditions have prevented farmers from devoting themselves to the cultivation of this faculty, but if the advantages of attending to it were sufficiently brought to their notice, they should have little difficulty in fitting it into their system. The men who spend money in chalking and draining, and who wait many years for the full returns, should be able to appreciate the value of what is, after all, the most fruitful element in the working of a farm. A man may do everything well from the growing of common crops up to the breeding of the finest animals, but if he stops short there, and turns out no men skilled in his methods, he is far from being a complete farmer, since he fails the industry on the side where it most requires support, if its 'strength' is to be maintained and increased. This is the defect of the exclusive farmer, whatever his qualifications may be. His own efficiency is exhausted, and he does nothing to secure its reproduction in others.

Exclusiveness is born in all men; it is nursed and made strong in farmers more than in others, and, therefore, a greater effort is required to overcome its influence, and to make a place for the opposite principle of association. Energetic men are encouraged by conditions to shape for themselves brilliant and isolated careers. But these make no appeal to the capitalist. No matter how much applause they win for a time, capital takes long views, and demands not so much a brilliant form of management as one that is sustained, with a preference for a steady, monotonous, upward movement. From a general survey of Oxfordshire the loss that occurs through the failure to transmit from one generation to another what experience has taught, seems too great and indefinite to estimate. A detailed investigation would bring out surprising results, both in cases where the management is of the loose, co-operative kind, and where it depends on an individual who surrounds himself with the non-conducting atmosphere. Reference to the waste of manurial values, arising from the faulty construction of yards, and to other forms of thriftless farming, was necessary, but every form of waste is trifling compared with this. There is something to be thankful for in the fact that the man who puts his ideas and experience into ploughs, binders, and breeds of live stock cannot gather them all into his grave, otherwise the methods of working farms would really be primitive, and their fruits meagre. So long as men have largely to begin building up their management without help from previous experience, with or without sufficient capital, progress cannot be so continuous as it might be. The loss of knowledge during the period of a generation will almost be equal to the gain. On the other hand, where the management is distributed, where one or two old men, one or two in middle life, and one or two who are young, contribute to it, the picturesque ups and downs and interruptions which keep capital at a distance can be avoided, and ground once gained can be held.

Such an arrangement does not work automatically. If it gives larger returns, it first of all demands greater concessions. Men have constantly to lay aside ideas to which they may have become very much attracted, and which, if they were single-handed, would go red-hot and without question into the management, and they have also to take up ideas strange to them which would never be put into operation if they were alone. This is the process which keeps health and energy in a business. Association of this kind begets the hard, money-making atmosphere which is too much absent from agriculture. But if any such system were adopted, it would seem an extreme piece of ill fortune for those who, in a figurative sense, threw up their caps when they left school, and took up farming because they believed it was one of the few callings in which a reasonable measure of freedom was left, a vocation in which, if a man wished a thing done, its performance was immediately undertaken without questions being asked. The man who appreciates a periodical rehearsal of a kind of day of judgement is a product of advanced civilization, of the city, and the average farmer hardly claims to be this. He does not enjoy the prospect of having his business experience brought back for examination, in order that he may make decisions for the future, and he will state frankly that he would risk perdition rather than put that experience on record himself, so that it may be brought up for this purpose.

But the problem of how to increase production has become too urgent for the old policy to continue. There is general agreement that some step must be taken, and, according to the evidence of farmers themselves, this must be in the direction of obtaining more capital. While there is no cause for pessimism or reproach, it is obvious that the difference between the organization of agriculture and that of other industries is becoming greater. These are organized for the special purpose of securing capital; agriculture is not. The principle of co-operation, of subdivision of labour, is being rapidly developed in their management, while it is practically excluded from that of farming. There is, therefore, reason for believing that all the difference in results disadvantageous to farming which now show themselves will go on increasing. Even landlords and farmers who might be expected to make sure that the capital in agriculture was adequate before they invested money in other industries will place more and more of it there, where returns and security are greater. And the thing which draws away capital from agriculture draws away labour.

Objections may be urged against the suggestion that agriculture might be developed under limited companies, or other forms of partnership. But objectors may reasonably be required to show an alternative and better method of getting capital. The situation is simple enough, and it must have confronted manufacturers at an earlier time. There are capable young managers who could use with profit to themselves and others a considerably larger amount of capital in farming than they are able to command, and there are capitalists ready to invest money in any business, provided reasonable security and returns are guaranteed. Farmers have never put their business into a shape which enables them to offer these two conditions, and, therefore, they cannot enjoy the use of this fund. They have struggled on in the hope that by their individual efforts they would accumulate enough to make the machine run at something like its full power, but, even if they succeed in the end, there has been the handicap of insufficient capital during part of the time when they were most efficient as managers, while the struggle itself frequently unfits them for making the fullest use of capital in their careers and for working in harness with others.

The subject of education is connected with that of management. In Oxfordshire there is difficulty in bringing education to bear effectively on farming. Hitherto few of the farmers' sons in the county have taken advantage of the training provided by agricultural colleges, and, as has been the case elsewhere, perhaps most of those who have taken the course have done so to prepare themselves for other careers. The situation differs from that farther north, and particularly in Scotland, where, although there is a much larger attendance at colleges, complaints are made that they have not fulfilled the expectations which were formed with regard to them, that they have not sent back to agriculture men who are raising the standard of efficiency. Oxfordshire has not got so far as this, having never responded fully enough to the offer of educational facilities at Reading and other places to see if the results were satisfactory or not. Even classes in the villages do not appeal to farmers. A matter which forced itself on the attention in some parts of the county was the absence of potential pupils on the farms. There were none of an age, or of a disposition, to go out and learn. In these cases, and they are numerous, if education is to reach farming at all, it must be brought to the farms. This is the form in which it seems to be most appreciated—in the visits of the county agricultural organizer. Actual difficulties met with in cultivation and in connexion with live stock, the questions of the manures and seeds to be used, are discussed on the farm with all the conditions present. Excursions of farmers are organized to Rothamsted, Reading, and other centres, where the results of experiments can be inspected. This is certainly a good method of bringing scientific teaching into touch with practice, and if the extension of visits to every farm could be carried out, it would give men who have been long isolated a new interest in outside movements and in their own work.

But this is not enough, and the indifference to education is a mark of weakness. Farmers fail to appreciate that things have moved rapidly all around them, and call for some readjustment of their policy, something more than haphazard methods. Many of them seem to know intuitively what is the right thing to do in using seeds and manures, but unless they have learned the scientific reasons for adopting certain practices, they cannot be sure of their ground in all circumstances, nor can they receive instruction from, or communicate their skill to, others. An exhaustive knowledge of chemistry and botany is not required, but with the increasing use of artificial manures and a variety of foods, farmers must either know enough of these sciences to guide them, or they must trust themselves to others.

There is a general impression that the college education does not make practical farmers. This is the chief criticism urged against it, and by way of suggesting a remedy the questions are always being raised whether young farmers should receive their agricultural education immediately after leaving school, or whether they should have two or three years' practical experience on a farm before entering a college, whether the college itself should be situated in some established educational centre, or placed on an experimental farm of considerable size. But if education has in any case been prejudicial to practice, this is more probably due to weakness in farm management than to anything indissolubly connected with scientific education. In teaching and learning both theoretically and by experiments in college, the financial aim is not always kept in view as it must be on farms. Scientific achievements are often necessarily treated as an end in themselves rather than as a means of making money. It is a defect in the curriculum of agricultural colleges that management or economics is not given a specific and more prominent place. It is the most natural thing in the world that young men should leave college with an enthusiasm for the development of theories with which they have been dealing, but the business of the management on the farm is to correct any one-sidedness like this, to check and control scientific keenness, and to co-ordinate it with the other factors that are at work for the production of wealth. If the management allows itself to be so up-set that money-making, the end and object of all business, is obscured, there must be failure and disappointment. The remedy is not to discard or neglect scientific education which adds to the power of producing, but to have a management strong and capable of preserving a balance, of directing all the forces which come under it towards the one essential object.

This point calls for special emphasis. Educational development has been one-sided. In a general way teachers of chemistry and other sciences have kept the financial aim before them, but this has not proved adequate. These activities must order themselves definitely in relation to economic considerations, and no system of education has hitherto provided for this. Although they are matters of daily interest, the functions of management are not thoroughly taught or learned, nor is their importance fully appreciated. These functions are twofold. The first is to discover markets, to understand their history and present character so completely that their behaviour for a year ahead, or for the period covered by arrangements which commit the farmer to expenditure, may be estimated as accurately as possible, and that when necessary new methods of appealing to them may be adopted. The second function is to see that whatever the markets ask for is produced in a manner which gives them perfect satisfaction, while leaving the producer satisfied. Every farmer performs both duties in some fashion. He may give little thought to the work, scarcely troubling to ask whether milk could be produced in a better way than was the custom in 1870; he may ignore changes in the demand, as many farmers did to their loss during the years 1880–90. On the other hand, men may give all the attention and study of which they are capable to this work and nothing else, finding it full of interest, and be conscious at the end that they have not mastered it, however much they have achieved. It is true that a tremendous strain was placed on agriculture thirty-five years ago, when it was told by the development of the world that it was no longer required to do exactly what it had been doing before. Farmers did not realize what a stern master the market was, and that the proper attitude to adopt towards it was to give as far as possible what it asked. They allowed themselves to be governed by the soil, by the climate, by custom, or by some authority other than the market, saying in effect that they could not do what it asked. The measure of their suffering was the measure of their transgression. Where anything is allowed to set aside the dictates of the market in determining the course of farming, in laying down the lines which it is to follow, loss will be incurred. It is in deciding questions of this kind, in observing all movements, in interpreting their significance, and in devising methods for dealing with them, that co-operation is valuable, and that education can be made more complete and efficient. So far as conclusions may be drawn from this survey of conditions in Oxfordshire, there seems too little reason for believing that the farmers are better prepared to adapt themselves in the event of a change in demand than they were in 1880.

Some excuse may be offered on behalf of farmers and of those responsible for agricultural education for their failure to recognize economics as the dominating question in agriculture, since economists themselves seem to have excluded their own science from part of its proper province, and to have surrendered this to chemistry and botany, actually admitting that considerations connected with these sciences determine production in some wide and general manner. In spite of new modifications made by each generation of writers in what is called the Law of Diminishing Return, the idea expressed in it is still chemical and botanical. Farmers cannot get a return on the money spent in cultivating or grazing land without reference to the support which the market affords. Economists have looked to the soil instead of to the market for an explanation of this phenomenon. If a farmer spends £6 in growing and marketing an acre of wheat, and receives £8 for it, he gets a profit of £2. If he spends £12 per acre, and receives £10, he loses £2. The second £6 does not produce £8 as the first did, and regarded as a chemical and botanical operation the result is said to be an evidence of the working of the Law of Diminishing Return, but from the economic point of view the farmer's experience would be described as the punishment for misapplying capital and labour, a salutary arrangement for keeping enthusiastic experimental students in check. The desire to grow an unlimited quantity of wheat on an acre is an impracticable ambition, and the pessimism which springs from its failure is unjustifiable. The principle which ought to determine what is the best thing for farmers to produce is not their personal predilection. It is the relation of the cost of the thing produced to the price received for it. If people only consult their private tastes in deciding what they will grow, they will probably often do something in which the market will not support them, and it will let them know this by leaving an insufficient margin between the cost and price. But capital invested in the production of things which the market demands, and in proportions which have reference to the strength of the various demands, will yield an increasing return. If there is a Law of Diminishing Return in the real world, it only operates in particular branches of production at a given time, while a law to the opposite effect is operating in other branches at the same time. Because economists too deeply infected with chemical enthusiasm, and farmers too firmly bound to a hard-and-fast style of farming, are losing 16% in growing wheat, more practical and more fortunate people are making 150% in other lines. If the capital were properly distributed, the loss would be avoided or diminished, but even to-day over the whole field of production there is an increasing return. Markets and the subdivision of labour are two parts of one system. They might even be defined as one and the same thing. They produce the same effects. They do not make man omnipotent, but they increase his command over the soil, enabling him to get more and more from it, to go on from achievement to achievement as he does in other respects. This is illustrated in the Chilterns and in other parts of Oxfordshire, where the farmers pursued their old style of farming and ignored the demands of the market, continuing to grow corn and rear sheep at a loss when the market was offering them profits on milk and the rearing of heifers. A perfect equilibrium arising from an exactly proportionate assignment of capital to the various branches of production according to their requirements cannot be expected, but a much nearer approximation than the present is possible. Hitherto there has been no conscious or systematic attempt either in agricultural education or in farm management to attain this, and until such an attempt is made, until much more attention is given to the work of discovering and following the bidding of the market, profits will not be even reasonably assured.

Any change in this direction would at once raise the question of the size of farms. A reorganization of farming by the introduction of co-operation in finance and in management can only proceed gradually, but it will involve the amalgamation of holdings even if the capital employed on many farms at present could, in the general interest, be multiplied several times without the enlargement of their area. As in other businesses, and as in cases where several farms have already been given to one farmer, the efficiency of the management would have to prove itself as a condition of financial co-operation. This would probably have no great effect on the number of small holdings, since the two movements go some way in the same direction. Opinions expressed in Oxfordshire on various aspects of farming suggested that the movement for small holdings had sprung largely from dissatisfaction among labourers and others with the management of farms. So much land had got out of hand during the depression that men became restless under the conviction that they themselves could make it produce more, if holdings of reasonable extent were granted to them. The opinions on this point of some land agents in the county were interesting. They said that, on the small holdings under their jurisdiction, this claim had been made good contrary to their expectations. More had been got out of the soil. In their purpose, therefore, and in their achievement, small holdings resemble the best of the large ones however dissimilar the outward form and condition may appear. Without any exhaustive survey being made, however, it must be said that the lack of capital on the small places seemed to be a serious drawback. In cultivating their roots the men, and in some cases their wives, were diligent, and kept the crops clean, but owing to want of manure the roots did not develop, those on farms immediately adjoining growing much heavier although the land was not so clean.

From one point of view the increase in the number of holdings might be regarded as a retrograde step. So far as men are isolated in working them, the progressive subdivision of labour is thwarted, while on the best-managed large farms it is developed. With the growing intensity of the management there is not only an increase in production, but a large number of men get a firm footing in the upward movement of the business, as they do in the highly organized undertakings in other industries, which offer an increasing number of attractive opportunities for enterprising men. The system of providing graduated or 'ladder' holdings, so that men can climb from one to the other, has been commended, but the same result can be obtained with progressive management on a large scale. It may seem, therefore, that small holdings may have been resorted to rather exclusively as the solution of a serious problem. If it is a question of whether progress and all its associated benefits are likely to be attained in greater measure under subdivision of labour on large holdings, general reasoning as well as experience would probably support the latter system. Even if smallholders co-operate for purposes of transport, and for buying and selling, they lose something in financial strength and in the stimulus which comes from co-operative management, and which generally is of the greatest benefit to themselves. When alternative methods of improving land are under consideration, and it seems difficult to decide which is better, the answer will often come if the question is merely translated from the material to the personal, and if it is asked which of the two is more calculated to develop the intelligence and energy of the men who are to carry it through. There is, of course, the possibility of an association among men on separate holdings that are not too large. This has grown in different parts of the country. Men learn from their neighbours, and a close and generous rivalry sets up a standard towards which all work. There is little of this, however, in Oxfordshire, and if the full advantages of co-operation are to be obtained, the principle ought to run through every department as fully as possible.

The question therefore arises whether farming has reached such a stage in its development that it would clearly lead to an increase in production if the department of pure management were given a much larger place. There is one farm in Oxfordshire on which progress has been made to such an extent that it serves as an example of what is possible, and affords a practical basis for forming a judgement. Kelmscott has been mentioned before. There is much good farm management in the county, but on this farm it differs from that on all others. Explanations of its success were casually given by many people, but most of them are represented in the opinion of a not distant neighbour who had seen the business growing for many years. He attributed it to the fact that the partners knew their business, and that one of them was always present when anything in the way of management was required. The form of the arrangement may be recalled. There are four partners, the father and three sons. There may have been something fortuitous in the circumstances which led to this association. Much must have depended on the senior partner, who has so arranged matters that his sons have come in and found abundant scope in developing the business. Individual ability and keenness are prominent, but they are not the features which impress by their singularity: the chief impression is that 'strength', which is absent on so many farms, is present on this one, and the reason seems obvious. Neither capital nor the policy has been split up to correspond with the different farms occupied, with the result that a much stronger management is at work on the total area of 2,300 acres than would be the case if there were four separate holdings of equal area with as many distinct forms of management. No criticism of this practical achievement was heard, but one objection to the principle underlying it was somewhat rashly offered. The critic, having in mind apparently the essential thing where there is one individual in charge, said it was important that the farmer himself should always be on the ground, a view which condemns the common system. For what farmer could develop a business of this size and importance if he always stayed at home, or if he did not always stay at home? In this case the management, since it is distributed, is able to be on the farm and in the market at the same time. Each of the young partners is at the head of a department, but each knows enough about the others to keep them going if their heads are away. The farm is large, and has grown steadily, but with its extension the intensity of the management has increased, the activity of control keeping pace with the addition of capital.

Family considerations are responsible for this partnership in the first instance, but out of it there has been built up a system of management which would serve perfectly as the basis for a purely financial association, a more permanent kind than the other. For as family reasons often lead to the formation of a partnership, so they sometimes bring about its dissolution. All the conditions, however, necessary for attracting and keeping neutral capital seem to be here. There is the frankness about the policy and results which is characteristic of other modern undertakings on a large scale, and so rare in farming. There is an efficient machine engaged in the production of crops and other things, and working in harmony with it are the latest methods of capturing markets at home and abroad. So much character, definiteness, and force are possessed by the policy that, although it is intangible, it almost produces the impression that it has a body or substance. It attracts labourers to the farm, and in certain branches gives young men a training with which they readily get positions on home farms where special attention is given to live stock. Over this large area the wages paid per acre are perhaps higher than on any other farm in the county, and they are certainly much higher than those on any farm where all the conditions except the management are similar, and there is no reason why this system should not go on developing, and making possible a growing increase in the amount of capital and labour employed per acre. In this business at Kelmscott the functions and possibilities of management are particularly well illustrated. There are several farms in other parts of the county where the management is highly efficient, but none on which it has been so strictly and formally developed as here. In these cases it would require only a little attention to place the business on a footing which would give to it elements of greater permanence.

The views expressed in these three chapters were discussed with landlords, agents, and farmers. None of them, however, put their criticisms in writing, although many of them had doubts as to the expediency of attempting the organization of farming on the lines suggested. Mr. L. L. Price kindly read the chapters in manuscript, and wrote the following criticism, which represents some of the views held and urged by farmers and others: 'I am not sure', he says, 'that the conception of the partnership between landlord and tenant is not carried beyond the limitations of the actual work-a-day world. In Chapter VII you allude to the possible resentment of the farmer against interference, and to his liking in that respect for corporate (and therefore non-resident) landlords. Is not the partnership nearer to a position for the landlord of a "sleeping" partner than you allow? Historically the mediaeval "stock and land lease" (as the continental metayership) was an active partnership; but it gave way to the later English system of the landlord supplying the equipment and the tenant the working capital, and the developments of legislation in the interests of the tenant seem to point in the direction of a less active partnership than you desiderate. Similarly you put your standard very high for management as well as for administration, and I am not sure that the facts are not too strong for the theories. I still think that the good or bad fortune of the farmer is more at the mercy of uncontrollable forces than you seem to allow. The course of markets, if beyond the control of the individual salesman, and even the whims of fashion, seem to me to be less capricious than drought or persistent wet, or a sudden storm which may bring to naught the best preparation; and for that reason phlegm is perhaps no unsuitable component part of a farmer's temperament.

'So far for general criticism—I now pass to some smaller points. No doubt in the days of depression landlords at first preferred remissions and abatements to reductions, but might it not be argued that, if farmers were really, as you contend, to be kept up to the mark by strict administration, such a policy was right, if, as I hold, so far as the depression was due to the rise in the general value of gold, it was not easy to see how long it would last or how far it would extend? Nor is it quite easy to reconcile the stimulus of raising rents quickly in response to a change in economic conditions with the security of tenure properly desiderated by good farmers. No very dissimilar dilemma makes its presence evident with regard to buildings. It used to be said that the mark of a good landlord was the erection of enduring rather than "jerry" buildings, but an intelligent writer like Miss Jebb has seriously contended that the permanent character of buildings is a drawback, because it offers obstacles to speedy change dictated by an alteration in methods of farming, and that buildings should be such that they could readily be "scrapped". What you say about the large barns for the wheat, and the need of cow-sheds, bears, I think, on this point, and there is a difference between agriculture and other industries in this possibility of rapid scrapping which, it seems to me, applies to other matters than buildings, and may stay the flow of capital in that direction. I agree with you on the desirability of that flow, but I think that you might add a word about the influence of recent developments of banking, substituting cast-iron regulations issued from the head office of large amalgamations for the personal knowledge and timely help of the individual banker.'

CHAPTER IX

LABOUR

No subject connected with agriculture has engaged such widespread interest during recent years as the position of the labourers. There has been a general desire to see an improvement in their standard of living, and considerable agreement as to the methods by which this should be attained. So many studies of the subject with special reference to Oxfordshire[1] have been published that this survey will probably add little to the information already collected. Labourers, however, play such an important part in agriculture that no discussion of the conditions affecting the industry would be complete which omitted to deal with their contribution to it. The somewhat passive nature of their duties, the fact that they wait to be directed and led, might be taken to imply that they count for less than their leaders, the farmers and landlords. Again, because their lot has won for them the sympathy and interest of people who otherwise care little or nothing about the industry, there is an impression that it is a subject for philanthropic rather than for economic consideration.

But the distinction between the work of farmers and landlords on the one hand, and of labourers on the other, is not absolute. The demands made on the intelligence for the purpose of deciding questions about the markets to be served, about the methods to be adopted in producing crops and other things to serve them, and about the proper development and equipment of land for their production, may be more exacting than those made for the purpose of carrying out details of the policies involved in these decisions. In the first case there is greater scope for initiative, and when a policy is adopted by landlords and farmers its effects for good or evil are much more widely felt than those which follow any act of judgement on the part of labourers. This does not mean, however, that a limit to the fruitful exercise of their intelligence has been reached by the latter. Among farmers in Oxfordshire it is a common enough complaint that labourers do not use their brains, and that in order to secure the efficient performance of operations they themselves must be present all the time, a fact which suggests that development in this respect is both desirable and possible.

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[1] *A Corner of the Cotswolds*, by Mrs. Sturge Gretton, contains an account of the labour troubles in Oxfordshire for more than a century. The information has been collected from the pages of the *Oxford Journal*, which reported events as they happened. The exciting incidents associated with Joseph Arch's agitation receive considerable attention. *The Victoria History of the County of Oxford*, vol. ii, p. 203, deals with the subject at some length. There are earlier works such as *The History and Antiquities of Oxfordshire*, by John Dunkin, which narrate the changes due to enclosure in different parts of the county. There is also Mr. Lennard's work on *English Agricultural Wages*, which contains a good many statistics with reference to local conditions, and the arguments in which are largely based on a study of these conditions.

Reference has been made to the relative importance of the duties which belong to each of those classes. Administration comes first in order of time, and its influence on both management and labour is more direct than their influence on it. Management cannot go ahead of administration or make good the losses due to its shortcomings. Still less can labour go ahead of management, and therefore the cause of any failure in the efficiency of labour ought not to be looked for wholly in the labourers themselves, or even in their immediate relations with their employers. If progress is to be made, every class engaged in agriculture must move together, and all their relations with each other must undergo some modification. Philanthropy, therefore, which concentrates attention on the experience of one class, is insufficient for the purpose of securing any lasting improvement.

The relations between Oxfordshire farmers and labourers are in most respects similar to those which exist between employers and employed in other districts and in other industries. Farmers advanced in years deplore the disappearance of the good and loyal labourers whom they knew in earlier times, while old labourers regret the loss of their old masters who differed for the better in some indefinite way from the present generation. To any one familiar with conditions in the north of England one or two characteristics of Oxfordshire labourers would appear strange. Some of them casually displayed bitterness against the increasing use of machinery for cultivation. Attempts are made to discredit the use of steam ploughs and cultivators by the habit of praising farmers who employed only manual and horse labour, and whose land was said to be the most free from weeds. Associated with this attitude towards the introduction of labour-saving appliances is a readiness on the part of the men to go on strike at busy seasons. On the other hand, farmers who had come from western counties said that Oxfordshire labourers were less discontented than members of the same class in the West, and this they regarded as an advantage.

No aspect of the problem is new. The first survey of agriculture in Oxfordshire was made in 1794 by Richard Davis of Lewknor. His report was printed and sent round by the Board of Agriculture to farmers in the county with the request that they would add any observations on the different subjects which seemed proper. A number of these were included in Arthur Young's *Review* published in 1809. Several refer to this subject of labour, and from them an estimate may be formed of what progress has been made. 'Day labourers', says an anonymous commentator on Davis's report, 'in this and many counties are worse off than any part of the community, besides their wages being much less in proportion; so that barely gaining a subsistence, and utterly unable to lay by whilst in health and strength, they can have in sickness or in old age no other resource than the poor's-rates, which frequently, by subjecting them to tyranny and oppressive insult, stifles the conscious pride of honesty, and corrupts every good principle.'

In giving his opinion on the subject a Mr. Richard Wills says that 'the situation and circumstances of the lower class of the community is a subject that merits an investigation as much as any that has come under our consideration. . . . It is a fact which cannot be denied that, for many years past, poor men who had large families have performed their labour with no better a subsistence than scarcely sufficient bread and water; the whole family of course must submit to the same humiliating fare. Such distress, I conceive, will be thought sufficient to pervert a natural good disposition. . . . It will now be proper to consider by what means a reformation in this class of people can be effected, and this, I think, should begin with a considerable advance in wages. If the proprietors of land had obliged their tenants to have paid their labourers 14*d.*, 16*d.*, or 18*d.* per day, in proportion to the size of their holdings, instead of raising the rents up to a degree which can scarcely be borne, it would have reflected upon them immortal honour.' The Marquis of Blandford of that day held somewhat different views with regard to the attitude of landlords. 'It certainly', he says, 'is an object to every landlord, and it ought to be to every tenant, to make the situation of the poor industrious man as comfortable as possible; for we must know that without his labour our farms would be of little value.'

These statements and proposals made in 1794 resemble in substance and even in form some which are made to-day, and perhaps it is true to say that the history of agricultural labour in the interval has been a series of repetitions of the situation described here, both with reference to the problem and to the manner of dealing with it. Oxfordshire gained an unenviable reputation as a result of the Board of Trade inquiry in 1907.[1] It is stated there about ordinary labourers that 'the three counties in which average earnings were lowest were Oxfordshire with 14*s.* 11*d.*, Norfolk with 15*s.* 4*d.*, and Suffolk with 15*s.* 9*d.*', and about horsemen it is said that 'in only two counties (Oxfordshire and Dorsetshire) were the average earnings of horsemen less than 17*s.* per week'. With regard to the present position there are no figures which accurately represent the rates of wages. Things are in transition, the variations are almost innumerable, and estimates by different authorities are contradictory. One reason for the discrepancies is that although there is an approximation to a flat rate of payment for the different classes of labour, discrimination with reference to individual capacity is common. Two increases have been granted recently in most parts of the county, one in the summer of 1914, and the other early in 1915, and the following figures are not given as being strictly correct. Taking the classification of agricultural workers adopted in the census returns, the average earnings of the different classes given here are the result of local inquiries in different districts. Labourers numbering 7,960 are paid 14*s.* per week, 733 shepherds 17*s.*, 1,261 cattlemen 17*s.*, and 2,293 horsemen 16*s.* The wages of shepherds and cattlemen vary from 15*s.* to 25*s.* Payments for overtime and piecework add something to these amounts. From the census returns it will be seen that a large decrease took place in the number of labourers between 1871 and 1901, that not only had this downward movement stopped by 1911, but that an increase in male workers of 742 was recorded. This increase coincided with, and is almost certainly due to, the improvement in prices and in methods of farming, and since the improvement has continued, it is probable that the increase in numbers went on until the war called so many men to the Army.

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[1] *Report of an Inquiry into the Earnings and Hours of Labour*, Cd. 5, 460, 1910.

It is not proposed here to go into physiological questions based on a consideration of the comparative wages and prices prevailing now and during earlier periods. That has been well done by others,[1] while the essential economic principle governing these matters has been largely overlooked. The general opinion is that the position of the

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[1] Rowntree and Kendall, *How the Labourer Lives*; M. F. Davies, *Life in an English Village.*

Persons Engaged on Agriculture in Oxfordshire, 1871–1911.

	1871		1881		1891		1901		1911	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Farmers . . .	2,121	177	1,652	130	1,719	132	1,681	115	1,862	130
Relatives assisting Farmers .	672	910	520	—	568	—	699	55	754	218
Bailiffs and Foremen .	221	—	291	—	269	—	268	—	265	—
Labourers . . .	18,771	1,235	17,048	667	14,151	278	6,019	53	7,960	32
Shepherds . . .	875	—	823	—	765	—	951	—	733	—
Farm Servants (Indoor)	534	116	—	—	—	—	—	—	—	—
In charge of Cattle .	—	—	—	—	—	—	1,535	25	1,261	27
In charge of Horses .	—	—	—	—	645	—	2,891	—	2,293	—
Others connected with Agriculture	26	—	22	2	12	—	89	3	—	—
	23,220	2,438	20,356	799	18,129	410	14,133	251	15,128	407
Total population of Oxfordshire	177,975		179,559		185,669		186,698		199,269	

labourer has improved during the last forty years. One evidence of this is the practical disappearance of women-workers from the fields and yards. There were 1,235 of these in 1871, and many of them were labourers' wives. In 1911 there were only 57, showing that it has been possible for men to maintain their households, presumably as well as in the last generation, without requiring the assistance of their wives as direct wage-earners.

There is, however, a fairly general agreement among farmers that an increase in the standard of wages is desirable, although they are naturally more conscious of the difficulties in the way of such a step than others. Knowing how barely equipped with capital many employers are, they do not see how these can pay more without crippling themselves more seriously. This is one way of stating the opinion held in a good many places that the wages represent the full value of the labour, and the belief that an increase would not be accompanied by any compensating advantage to the farmer. When attention is drawn to the higher rates paid in other counties, the reply is that labour in Oxfordshire is inherently less efficient, that there is something in the race, in the climate, or in other conditions which makes them less energetic mentally and physically than members of their class elsewhere.

There is no doubt that the rate of working prevalent among Oxfordshire labourers is slow. This may be due to a number of reasons, some of them peculiar to agriculture and others arising from general conditions. Certain customs seem to have an influence on the amount of work done. There is, for instance, the system according to which the horse labour is performed and which has important effects on the working of arable land. The custom which is general in the midland and southern counties gives a shorter day of horse labour than that observed in other parts, and it may also be responsible for a less active rate of working. The kind of meals which the horsemen get, and the manner and times of taking them, are considered by some farmers not to be consistent with energetic action. They come and attend to the horses about five o'clock, and have breakfast before going out to the fields at seven. They have another meal about half-past nine or ten, and on some farms another at twelve, both in the fields, the horses being fed at the same time. On most farms horse-work in the fields stops at three o'clock, except during hay-time and harvest, and after that the men clean and feed the horses. The meals taken outside generally consist of dry bread and cold boiled ham or cheese, with beer or tea for drink. So far as the men are concerned, the objection to this system is that under it they have no substantial or invigorating meal during the eight hours they are engaged in the real day's work. There is the view that they get accustomed to this, their powers of endurance being sufficient to keep them going actively enough, and there is the contrary opinion that they would be more fit in the afternoon if they had a better meal at home in the middle of the day. The reason for not unyoking the horses and going home is to avoid loss of time, and the men are said to favour the present arrangement with the earlier hour for stopping rather than that there should be an interval at mid-day and a longer afternoon in the fields. The most common alternative to this is where the work begins at seven and stops at twelve for dinner, being resumed at one or half-past one and going on until six, or in winter it goes on from daylight until dark with an hour for dinner. Under the first system the time given to field work is shorter, and the time devoted to attending the horses morning and evening seems unduly long. This must be a considerable handicap during seed-times in autumn and spring, since it is frequently very difficult to get in the wheat before the winter rains begin, or to get in barley and oats early enough after the land has dried in spring. An hour and a half or two hours per day more of horse-work must make a difference in progress.

Another feature of rural conditions not affecting agricultural labourers alone is the custom of working allotments. In many parts of the county it is a common thing to see labourers coming out to cultivate their little holdings between five and six in the evening. In 1914 there were some 4,500 acres under allotments, the average size of them being about a quarter of an acre. The labourers' object is to add something to their earnings, but they do not often profess themselves satisfied with the results. Complaints are made about rents being too high, and men frequently tire of cultivating their small areas, and give them up.

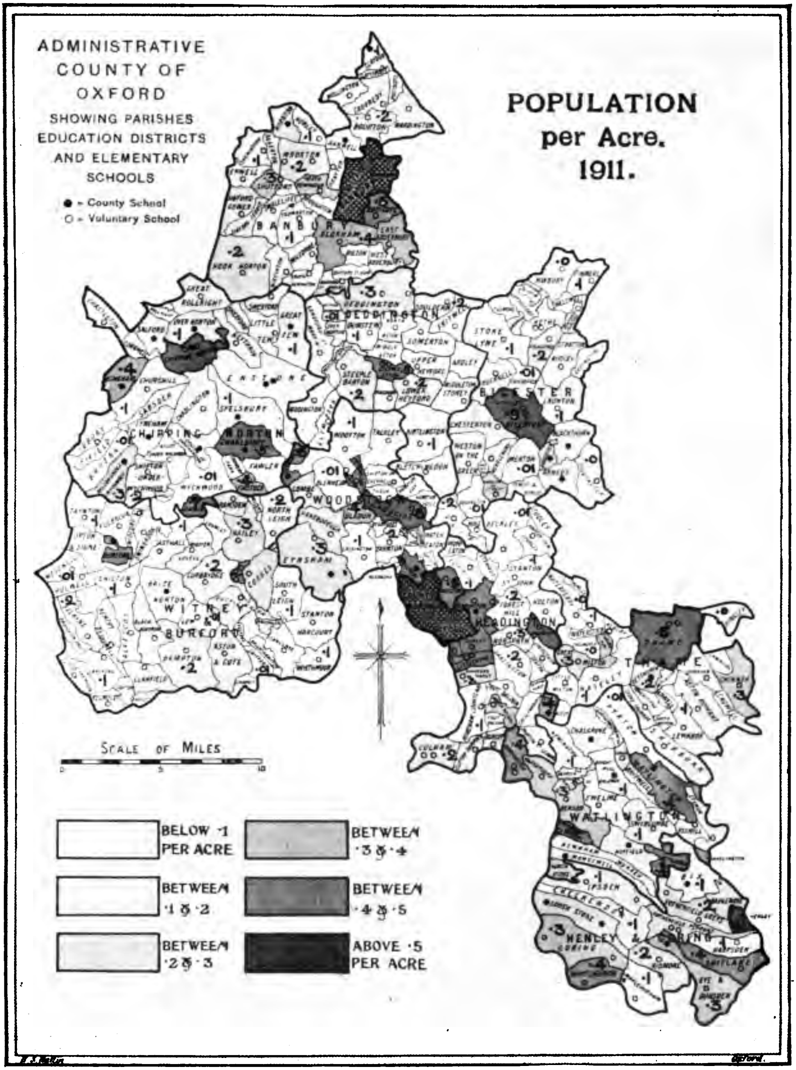
There is an opinion that allotments are both a cause and effect of slow development, that they neither contribute to the success of farming nor to the improvement of the labourers' position. It is pointed out that in parts of the country where wages are highest there are few allotments, and this association of high wages with the absence of allotments is found also in Oxfordshire. There is said to be a disadvantage in the division of the labourer's interest between his work on the farm and his work on the allotment. A number of causes seem to account for the persistence of the system. Labourers have never entirely lost the ambition to become their own masters in this way, to get possession of land, no matter how small its area, which they can manage according to their own ideas. The traditional resentment against enclosure also lingers among them. They regret the disappearance of the common lands, and when their earnings are low and uncertain they seek a modified re-establishment of the old system. This seems to be the main cause in promoting all movements towards different forms of small holdings. These are resorted to when the present system of farming fails to make reasonable use of the land and to afford the labourers an adequate living. But none of the conditions in Oxfordshire seems to justify a condemnation of enclosure, although it must be confessed that the present system has too often failed to vindicate itself. Under the co-operation of landlords, farmers, and labourers, the management and working of land have not always provided reasonable remuneration for the last class, not because of a vice in the system, but because the co-operation has not been conducted in harmony with demands inherent in itself. Enclosure is as much part of a progressive policy as any form of subdivision of labour, and the remedy for low wages, or, more comprehensively, for a low standard of production, is not a reversion to an antiquated practice, but to require that the system adopted in substitution for it should be properly worked. In taking over the management of land which had formerly been worked in a primitive and expensive style, landlords and farmers incurred the obligation of improving the position of the labourers as well as their own. They may be reasonably held to the fulfilment of this duty.

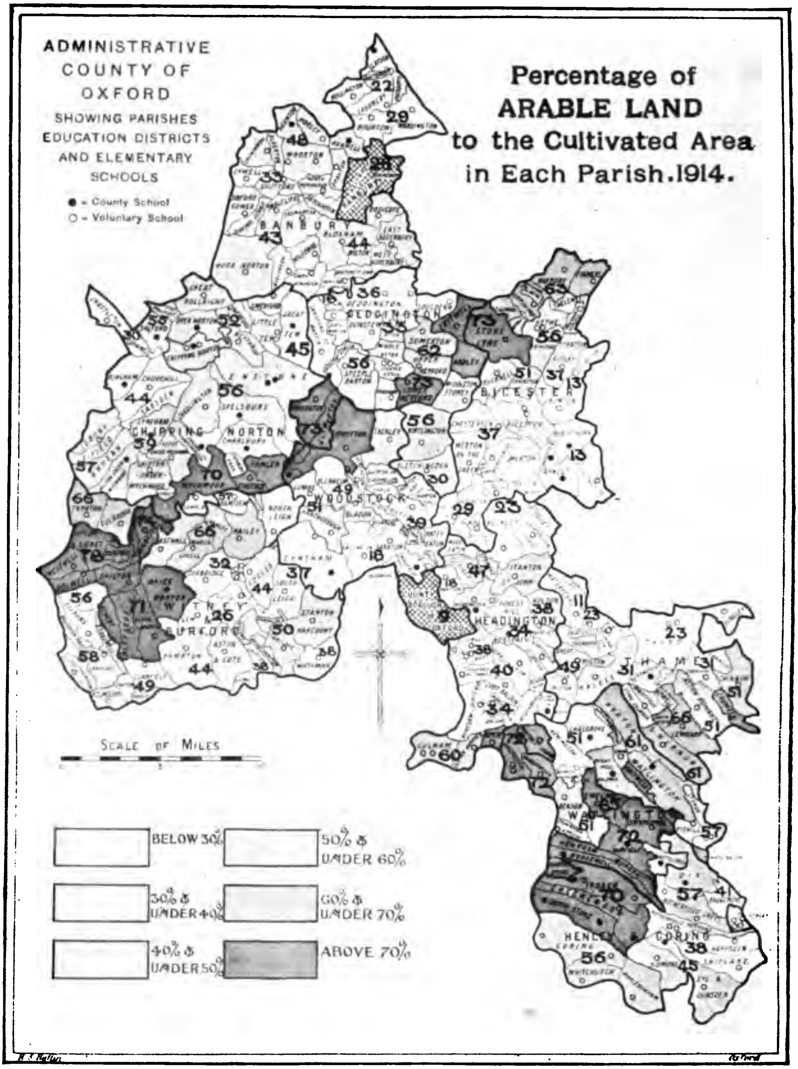
In a more general way a slow, easy-going spirit shows itself among the people of Oxfordshire. Oxford and such towns as Chipping Norton and Banbury are the shopping centres for the inhabitants of the villages for a considerable distance round, and women travel frequently to those places to do business. A common way of making the journey is by carriers' vans, not only from parts where the railway facilities are poor, but from places to which there is a good service. Fares are lower by road than by railway, the vans bring passengers right to their homes, and, since time appears to be of less value than money to them, they spend the greater part of a day in journeying to and from the town. Railways, therefore, even in parts of the county through which they run, have not had much of a quickening influence on village life.

The immediate physical conditions which affect labour, and particularly the matter of remuneration, are most frequently the subject of discussion. On the need for more and better house accommodation there is almost general agreement among farmers. For the purpose of securing the comfort and efficiency of the men, their convenience to their work, the general well-being of their families, and of making the life as attractive as it might be, there is a deficiency in the supply of cottages, and some that exist are in wrong positions. If there are people prepared to undertake the erection of suitable houses throughout the county, there is no scheme of improvement which will receive such wide support. The principal difficulty in this connexion, however, has been the question of how to make ends meet, since the labourers cannot afford to give more rent out of their wages in order to make an effective demand for cottages.

The question is whether or not wages can be raised on a sound and permanent basis. It is a matter of convenience whether an economic rent is paid for cottages, or whether they are given as part of the earnings. There is a belief more or less well founded that the department of labour is badly managed in the agriculture of Oxfordshire, that it is less productive than it might be, and that a cause and evidence of this are the low wages paid to labourers. Accepting the view that at least considerable improvement is possible, the suggestions made for achieving this may be noticed. Hitherto the methods adopted have been negative and indirect in character. This is by no means peculiar to agriculture.

The want of success in managing labour everywhere, in securing satisfactory relations between employers and employed, is chiefly due to the fact that negative rather than positive principles have been relied on for the attainment of the object desired. It is no more profitable for farmers to be at variance with labourers than it is for them to work at cross purposes with the soil and weather. In another county than Oxfordshire a farmer, whose predecessor had gone bankrupt, said the latter was always quarrelling with his men, and was always a month behind with his work. When the differences are on a wider scale the detriment is greater. In discussions of this subject and in practice, although in these matters practice is generally ahead of abstract theory, attention has been given to the operation of only one set of economic forces, as if only one set operated. With regard to the parties to whom they are applied these forces are negative, coercive, and indirect, and they are generally accompanied by a pugnacious spirit if not by pugnacious action. The changes in conditions from which an increase in wages has been looked for have been either some arrangement by which labour makes itself


ADMINISTRATIVE COUNTY OF OXFORD
SHOWING PARISHES EDUCATION DISTRICTS AND ELEMENTARY SCHOOLS
● = County School
○ = Voluntary School
POPULATION per Acre. 1911.
SCALE OF MILES
0
5
10
BELOW ·1 PER ACRE
BETWEEN ·1 & ·2
BETWEEN ·2 & ·3
BETWEEN ·3 & ·4
BETWEEN ·4 & ·5
ABOVE ·5 PER ACRE
BANBURY
DEDDINGTON
CHIPPING NORTON
BICESTER
WOODSTOCK
WITNEY & BURFORD
HEADINGTON
THAME
WATLINGTON
HENLEY & GORING
EYNSHAM
HOOK NORTON
CULHAM
ENSTONE
Oxford



Percentage of ARABLE LAND to the Cultivated Area in Each Parish. 1914.

scarce, more or less permanently through migration, or temporarily through combination and strikes, or through legislative action by which obligations are imposed on employers, or through appeals to the sentiments. A general opinion seems to be that agricultural labour lacks the mobility necessary to carry it to centres which are comparatively distant, and that this prevents labourers from bringing pressure to bear on farmers by thus reducing the supply of labour. It is doubtful if this practice of raising wages by negative and coercive measures is sound enough to justify its almost general and exclusive adoption. The right to exercise pressure will always be a necessary prerogative of labour, since the situation is one of a relationship between employers and employed, and each interest must represent itself. At the same time wages must have a relation to the total amount of production from which they are paid just as the remuneration received by farmers and landlords must have such a relation. There have been times when labour has been scarce in Oxfordshire, when farming has been slow, and production on a proportionately low standard. On the other hand, labour is probably more abundant in counties like Durham and Northumberland, and consequently the higher wages there are due less to any greater difficulty in getting labour than to the greater productiveness of management and labour taken together. That is, the higher wages may not be the result of the mere negative advantage which agricultural labourers derive from the nearness of a demand for labour in mining and other industries, and which enables them to exact better terms from farmers. They may be due chiefly to the fact that the more energetic methods pursued in these industries have a stimulating influence both on agricultural management and labour, rendering them more productive. This does not mean that to secure greater activity in the organization of agriculture it is necessary that the industry should be carried on immediately adjacent to others where a more active policy prevails, since an active policy can be transported, and a sufficient number of Oxfordshire farmers have achieved success in this respect to prove that the existing organization admits of satisfactory development. For this purpose education, which has as its object the provision of a positive motive for making progress, is an alternative or complementary method to migration and strikes.

There have undoubtedly been periods when farmers and landlords received a disproportionate share of what was produced in farming, and in some cases to-day this condition exists, but such want of balance may be redressed by positive methods as well as by negative and coercive, and with less waste. The perception and experience that labour subject to this kind of treatment is as unprofitable as a badly administered estate, as undrained and foul land, or as badly bred and ill-fed stock must move men towards better methods. This is a subject which ought to come up for consideration from time to time as seriously and systematically as problems connected with cultivation, but hitherto the matter has been left until misunderstandings have accumulated, and until the situation has become intolerable. Then, for example, it has been raised in an atmosphere of agitation and strikes, with Joseph Arch on one side and farmers of extreme opinions on the other, or it has been taken into politics and discussed in the partial manner appropriate to them but less suited to financial or economic interests. Whatever arrangement is arrived at as the result of strikes, or of political controversy, is only reached after strife that is more or less wasteful, while there are always left in different classes too many people with injured feelings, dissatisfied, and therefore unfitted to do the work which they ought to do, and which they would do, if the economic bearing of the steps which have been taken, rather than their personal and political bearing, were made clear to them.

Besides the resort to allotments, to migration, and to strikes, for the purpose of improving the position of the labourers, there have been appeals to the sentiments of other classes. Recently, and indeed for more than a century, as is evident from the reports of 1794, appeals have been made to the feelings of compassion and honour to enlist them in the work of removing what is regarded as a blot on the national life. Efforts have been directed towards the discovery of the minimum rates on which families can subsist, and when these physiological data have been obtained, appeals have been made for an alteration of the unhappy condition of those whose remuneration falls below the minimum. Mr. Wills, writing in 1794, asks the Oxfordshire landlords to reduce their rents and raise the wages of the labourers on the ground that such a step would 'reflect upon them immortal honour'. The people who would remove these evils in this way seem to work on the wrong motives. Such appeals have their place, but unfortunately, again, they have been allowed to exclude economic principles from the economic sphere. Farmers and landlords are prevented from raising wages by the fear that this would mean some indefinite, financial loss to themselves. There is a great likelihood that they are mistaken, but since this is not evident they refuse to jeopardize their financial position for considerations of immortal honour, or for anything which appears remote from their own interest. This fact seems to be one of the last which men are able to appreciate. They find it difficult to regard with the seriousness it deserves the strong desire in others to make money. They have not taken pains to understand this desire, to ascertain what it requires and what it gives in return for recognition of its requirements. The motive which impels men to invest money in labour is an assurance that they will receive an adequate return on the investment. Let farmers keep on investigating by safe methods whether an increase in wages gives a due return or not.

An appeal to the sentiments is much less certain in its results than the demonstration that a shilling invested in labour brings fourteen pence, or even thirteen pence, to the investor. It may be said that this is a sordid consideration, but, if it is so regarded, all activity involved in obtaining a livelihood must be treated as sordid. Under the system of divided labour men will seek to benefit themselves by co-operating with others, by giving something and receiving more in return. The process is reciprocal among all classes. The prospect of exchanging a shilling for thirteen pence constitutes a direct and positive motive which will always keep men going forward, not to their exclusive advantage only, and if the prospect arises out of an experience due to an increased payment to labour, there is no reason why the minimum standard should not always be left behind. This survey has followed the departments under which agriculture is organized in England, according to the order in which initiative falls to them. But the same principle governs the working of all. These departments are (1) the administration of land, (2) farm management, which includes the management of (3) labour, (4) soils and crops, and (5) live stock. Among the departments there must be a constant process of giving and receiving, and the responsibility for starting the process of initiating any movement rests with administrators and farmers. Some landlords and many good farmers in Oxfordshire hold the mischievous doctrine that they may give to labour and land and yet they will not receive anything in return. Farmers say definitely that they might treat their labourers in two widely different ways, and the conduct or response of the labourers would be unaffected by this treatment. They say exactly the same thing about their soils. Where there was time it was easy to disprove their theory, for in telling the history of their farms they invariably mentioned the gratifying development in the efficiency of one or more labourers, and the steady if slow approach to a standard of reliable cropping on the part of one or more fields.

Education commenced with the development of the lower departments, with the management of soils, cultivation, stock-breeding, and dairying, and has not yet been applied to the development of the efficiency of labourers, farmers, and administrators so far as this is affected by their reciprocal relationships. There are a thousand farmers and landlords in Oxfordshire who have applied their minds with the utmost seriousness and method to the problem of ascertaining how the production of sound crops, live stock, and dairy produce can be made less and less a matter of chance for one who has acted similarly with regard to the part which labourers, farmers, and landlords are capable of playing together. The prospect of making more money has induced men to employ scientific methods in the departments of soils, crops, and stock, but since the development of these departments must follow the development of administration, management, and labour, there is the prospect of making much more money from the application of scientific methods to the latter group. For instance, there are many different ways of managing labour in Oxfordshire, and some of these must be more productive than others, just as some ways of managing soils are more productive than others. The advantage of using certain manures in different cases is now established and capable of measurement, and the treatment of labourers offers an equally profitable and interesting field for experiment.

It is impossible to distinguish between the conditions which are favourable to the development of the mental and physical activities of labourers, since both are developed by the same kind of treatment. With regard to the more purely physical, however, a number of farmers in Oxfordshire are of opinion that the quantity and character of the subsistence procurable with the average wages are insufficient to maintain the vigour of the men. The meaning of this can be appreciated fully by people who have accustomed themselves to any form of strenuous exercise. There is a direct connexion between the amount and quality of the food which a man takes and the amount and quality of the work which he can perform. While this connexion shows itself in the somewhat slow methods of working followed by Oxfordshire labourers, it was at one time recognized and stated rather clearly by farm labourers in Scotland. There young labourers are generally lodged and fed by the farmers, some of whom express their views on economics by practising excessive thrift with regard to the food of the men. Porridge is a cheap fare which produces a temporary feeling of satisfaction, but which leaves a sensation of weakness and vacancy before much work is done. The breakfast of the labourers in some cases consisted chiefly of this. When hay and corn were cut by gangs of men with scythes, the gangs were led by strong and comparatively well-paid foremen. To these the young men used to address their views on the question of food and labour in the jingle:

Porridge and whey can't cut hay,
Ham and eggs take care of your legs.

In Oxfordshire the relations between farmers and labourers are perhaps somewhat stiff and distant compared with those which prevail in northern and western parts of the country. The practice of consulting labourers about work on which they may be employed is less common. The cause of this may be the lack of education and enterprise among them, as well as a sort of traditionally exclusive attitude on the side of many farmers. The status of the village schoolmaster, the fact that the education provided in the village schools is not regarded as good enough for farmers' children even during their first years of learning, are things which call for consideration. Character, like water, cannot very well rise to levels higher than that of the sources from which it springs, and if a good education and other good influences are not placed within reach of the labourers, it is hardly reasonable to expect the best results. General conclusions on this subject could only be arrived at after longer observation, but to indicate the opinion formed an occasion may be recalled on which surprise was expressed at meeting a farmer in North-west Oxfordshire driving three or four of his labourers home in the evening in his motor-car. He had been to the station, or town, to meet his wife. The men had been opening roads for the binder in wheat-fields on one of his more distant farms, and on his way back he had gone round to take them home. This was one of the most successful businesses in the county, and from this incident it would appear that the advancement of the work was placed before considerations which on other farms would undoubtedly have taken precedence. Another kind of relationship was illustrated by the confession of an old and candid farmer in the same district. 'I would like to keep cows,' he said, 'but I am so peppery and the men are so independent, that we should have quarrels, and they would leave me in the lurch.' There are other failings besides a hasty temper which prevent men from making money.

Men are naturally reluctant to make their relations with each other the subject of thorough and systematic consideration. It is the most difficult thing to do, and therefore it is the last to be done. There is nothing in the world, nothing either dead or living, with which a man is so impatient as with another man, and not least when there is a question between them of making money. In spite of this, or all the more because of this, it is a subject worthy of positive treatment. Some Oxfordshire farmers know that it is possible to make money through their relations with labourers, since they confessed that they owed an undischarged debt to their shepherds and cattlemen. In this connexion farmers who have acquired several holdings one after another have had no difficulty in obtaining bailiffs for them from among their ordinary labourers or carters. They have raised their wages by several shillings a week, and they pay tributes to the energy and intelligence with which these men carry on the management so far as it is left to them, proving that men drawn from the labourers are good enough material, and that when they are given more they give more in return. While there are limits to the scope of the services which labour renders to agriculture, there is the possibility of an indefinite increase in its efficiency within its own sphere. The question of how to secure this increase is not dealt with seriously in any course of instruction, agricultural or any other kind, nor has the nature of the problem been even approximately defined. It has been taken for granted that, because employers have some intelligence, they should be able to handle their men with the necessary skill and with little training, just as employers assume in a vague way that, because labourers are human beings possessed of reason, they ought to exercise intelligence without much direction, or careful consideration of what is required to make them efficient. Both are slovenly assumptions, since the mental and physical activities of labourers cannot be satisfactorily developed and applied to the production of wealth without careful management and organization on the part of men educated for this work. Three things are made clear enough in the relations of farmers and labourers in Oxfordshire. There is an economic or financial advantage in arranging (1) that the management and direction of labour should be so active that the men are left as seldom as possible without work to do and without clear and definite instructions as to the manner of doing it, (2) that it should be ascertained when economic conditions justify a concession to stimulate their interest in the business, (3) that habits hostile to the relations which are most consistent with close and active co-operation in money-making should be examined, and put in the balance against the financial loss to which they give rise.

The question of the proper kind of education for country children has been the subject of some discussion. In Oxfordshire and in most parts of the country a change in the character of the education given in elementary schools has been advocated. There has been a desire to give it a definitely agricultural turn, to make boys of fourteen composite products in the form of partly instructed chemists, botanists, mechanics, and perhaps veterinary surgeons. Under such a policy there would be a danger that the art of grasping and understanding their employers' policy would be less perfectly learned than it is at present. The idea is based on a rather one-sided conception of the part which labour is fitted to play in agriculture. In the organization of the industry the activities of labourers connect the purely mental activity of management with the purely material activity of soils and stock, and the productiveness of labour depends on the exercise of their intelligence and physical strength which enable them to grasp the policy of the managers and at the same time to give effect to it by the physical handling of material things. One thing which becomes of increasing importance as the organization of industry makes progress is that men engaged in it should be able to work in greater harmony with each other in the more complicated relationships which arise, and the ability to do this does not grow without cultivation. There is an attitude of mind which makes men good learners, and if this is not acquired before the age of fourteen, its acquisition becomes increasingly difficult. But if boys are masters of this art in some measure at that age, they have lost little time so far as their ability and the opportunity to gain technical skill in agricultural operations are concerned. A fuller knowledge of history, of local industrial history as well as national and international, would be useful for the purpose of showing the children how progress has been made, and would enable them to adapt themselves more rapidly to new developments, and to assist in shaping them.

If the object of educating children in the more technical elements of agriculture is to lessen the work of directing labour afterwards, the proposal is unsound, since the one thing will not fill the place of the other. If the object is to prevent them from being attracted to other callings than agriculture, education again is no substitute for the essential thing. There is an old saying that 'every land is a fatherland, wherever a man is well off'. This applies also with reference to a calling. Agriculture has failed to keep pace with other industries in this respect. For a fairly long time its economic attractions for labourers have been weaker by some appreciable percentage than those offered elsewhere. There has been no sudden rush to the towns, or to the Colonies, but there has been a steady movement under the influence of the difference in economic conditions to which the labourers are sufficiently susceptible. Whether statisticians have succeeded in assessing this difference accurately in figures or not, the labourers are sensitive and alert enough to become aware of its existence. One observer may take the view that conditions are extremely bad so far as housing, holidays, unemployment during winter months and the whole subject of earnings are concerned; another may conclude that labourers have a happy life, that they are relatively free from anxieties and responsibilities, that, when they congregate at the country stations, their laughter is more spontaneous and hearty than any that is heard in theatres or picture houses. This latter view is partially sound. It is a mistake to assume that the labourer's life is one in which misery is predominant. But when all sentiment is eliminated, there remains the fact that there has been a decided movement away from agriculture, and consequently an increasing difficulty in carrying on the work. The fact which determines this action is the degree of satisfaction which the labourers enjoy in and from their work compared with what they can obtain in other employments. This is not to be measured altogether in money. Apparently the men are catching the spirit of their fellows in the cities. The desire for more holidays is spreading. Some farmers complain that they must be careful now, and speak civilly to a servant who has made a mistake, or he will give notice on the spot. This does not seem to be a disadvantage, since a correction administered without harshness is more likely to be profitable financially than one which stupefies and alienates a man. It was noticeable also that good, active farming held the men, making village life more attractive. Wages are undoubtedly the main consideration, however, and it would seem to be good policy for the farmers to set their account for their periodic increase. They are not likely to make this too large, but they should endeavour to maintain the equilibrium between their business and others as far as possible, to prevent more of their best labourers from being drawn away by giving small increases of 5 to 10 per cent. Production and wages have risen in other occupations. This is the main cause of the improved markets for beef, milk and other farm produce, and since progress cannot be one-sided, it is better for farmers that they should move spontaneously rather than wait to be coerced.

CHAPTER X

SOILS

In attempting to describe or to classify the soils found in the county it will be convenient to follow the arrangement which has been already followed in the description of its agriculture, and to describe the variations occurring in a given district rather than to work from geological formations.

The soils of Oxfordshire are derived from geological formations included in the Cretaceous and Jurassic systems, and from material deposited in more recent times in the river valleys by the action of water.

The strata, except on the extreme north and north-eastern parts of the county, are free from deposits of glacial drift, though the deposits of plateau gravel in the neighbourhood of Freeland and the quartz pebbles found all over this district may be the result of this agency.

At the commencement of each section will be found a short table giving the geological formations occurring, and the nature of the soil to which the formations give rise and the names of the principal towns and villages on each.

These soils were divided by Arthur Young[1] into four main groups or areas—the stonebrash, the red soil, the chalk, and the area of the miscellaneous loams, the last lying between Oxford and the foot of the Chiltern escarpment.

The stonebrash is the area of the limestone, and covers a large tract of country to the west and north of Oxford, and small patches between Oxford and the river Thame.

The red soil is found to any extent only in the north of the county, round Adderbury, Banbury, Wroxton, Shenington, and Hook Norton.

The chalk is the subsoil all over the Chilterns, though owing to the fact that it is almost everywhere covered by superficial deposits typical chalk country is not found save at the base of the north-western escarpment, where it runs in a narrow belt from Goring to Chinnor.

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[1] Op. cit., p. 3.

In the opinion of the writer this division of Arthur Young's emphasizes too strongly the importance of the chalk, which characterizes Oxfordshire farming only to a very limited extent, while at the same time it omits all mention of the clays which form a not unimportant group of Oxfordshire soils.

Notwithstanding this, it is important to remember that although three of the great clay strata of the country—Gault, Kimeridge, and Oxford Clay—are included in the Oxfordshire series of soils they are of less importance than might be supposed, owing to the fact that they are much covered by superficial deposits. The impression that remains of Oxfordshire soils and Oxfordshire farming is not that of cold heavy clays and interminable grass, but of light stony soils, of barley and sheep, and an extensive system of cultivation.

For purposes of convenience we shall deal first with the southern portion, and afterwards with the country which lies to the north of Oxford and the upper Thames. In the southern section, the description will start from Reading, and will pass northwards over the Chiltern escarpment to the plain of the Thame and Thames. In the northern section the description will start from Oxford and will deal with three sections from west to east.

SOUTH OXFORDSHIRE

Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
Alluvium.	Black soil, containing much humus; usually rather poor grass.	Banks of Thames, Thame and tributary streams.
Valley gravel.	Red, gravelly soil, variable in depth and character, easy working, but cannot withstand drought.	S. and N. Stoke, Benson, Warborough, Roke, Dorchester, Drayton St. Leonard, Chalgrove Field.

SOUTH OXFORDSHIRE (*continued*)

	Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
	Plateau gravel.	Gravel soil varying from deep, useful land to sharp gravel, all in need of lime.	Rotherfield Peppard, Rotherfield Greys, Bix, Kidmore End, Harley, Gould's Grove, Brightwell Grove, Ewelme.
	Clay with flints.	A heavy loam, useful land if well managed. Grass fairly good, much wooded.	Woodcote, Checkendon, Nuffield, Highmoor, Fawley, Cookley Green, Northend, Shirburn Lodge, Stokenchurch.
Cretaceous.	Chalk.	Light, variable loam, resists drought, usually containing flints. Good barley land; in some districts heavier and more suited for wheat; grass very poor.	Henley, Stonor, Pishill, Cheue, Ipsden, Crowmarsh, Britwell Salome, Watlington, Shirburn, Lewknor, Aston Rowant, Crowell.
	Upper Greensand.	Heavy, sandy loam. Good wheat land.	Brightwell Baldwin, Cuxham, S. Weston, Easington.
	Gault Clay.	Heavy clay, usually grey or black in colour. Where tilled heavy, but good wheat and bean land, usually in grass of good quality.	Berrick Salome, Newington, Warpsgrove, Stoke Talmage, Tetsworth, Sydenham.
	Lower Greensand.	Variable sandy loam. Useful potato land.	Clifton Hampden, Burcot, Nuneham Courtenay.
Jurassic.	Portland stone. " sand. Shotover sand.	The stone gives stony shallow limestone land, excellent for sheep, but subject to drought. The sand gives a light, sandy soil which feels drought less, but a wet season suits it best.	Marsh Baldon, Toot Baldon, Great and Little Milton, Great Haseley, Cuddesdon, Garsington, Shotover Hill, Little Haseley, Tiddington, Thame.

SOUTH OXFORDSHIRE (*continued*)

	Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
Jurassic.	Kimeridge Clay.	Cold, heavy clay. Grass not so good as on the gault, but better than on Oxford clay.	Sandford Brake, Denton, Horspath, Wheatley, Waterstock.
	Corallian. Coral Rag.	Coral rag gives rise to regular stonebrash soil of varying depth; burns, but carries sheep very well in winter. Sand is more drought-resisting; not such good sheep land; valuable market garden soil.	Sandford-on-Thames, Littlemore, Cowley, Headington, Elsfield, Beckley, Stanton St. John, Forest Hill, Holton, Wheatley.
	Oxford Clay.	Cold, heavy, yellow clay; shallow soil, nearly all under poor grass.	Temple Cowley, New Marston, Marston, Woodeaton, Noke, Menmarsh, Waterperry Common.

That part of the Chilterns which is in Oxfordshire is comparatively small and is not a striking agricultural district.

On crossing into Oxfordshire from Reading and climbing the hill beyond Caversham a country is reached which lies wholly upon the chalk, but is almost entirely covered by superficial deposits, clays, gravels, and sands. The result of this is that nowhere do the conditions obtain which are normally found upon the chalk, and it is not until the first escarpment to the north-west is passed that the landscape and its farming appear to be in any way typical of normal chalk country.

Near Henley, Rotherfield Greys, and Peppard there are large deposits of gravel containing pebbles and small flints, and these soils vary from a sharp gravel, where the growth of everything depends upon a moist season, to a deep and useful loam which will grow almost any kind of crop. On the banks the chalk is very close to the surface and the soil is thin and poor. According to local belief, which was borne out by the writer's own observation, the round pebble is a sign of rather sharp and poor land, and the larger flint, especially the brown flint which has not been waterworn, is a sign of better land.

All over the country the land is crying out for chalk, and the effect of a dressing is almost incredible—visible not only upon the crops, but in the character of the weeds and even upon the colour of the soil itself, making it not lighter in colour but darker. The application of large quantities of chalk was one of the regular practices here, and the annual removal of large quantities in the drainage water has gradually depleted the stock until the land has become sour. Only in the old way by the liberal application of chalk or lime can this condition with all its effects be remedied.

Towards the north-west the same variable country is traversed, a district which is good sheep land and fair barley land, for most of it varies too much to produce barley of first quality, land which will produce useful temporary pasture but is not so suited for permanent grass.

Nearer the north-western escarpment, a heavier soil makes its appearance, in some places a good, deep, flinty loam overlying a red clay, in other places containing more clay, representing the 'clay with flints' of the geologists. This soil contains large quantities of unworn reddish flints and is accounted useful land, though cold and late. It needs a good deal of skill and care in cultivation and mistakes in tillage are apt to be costly.

These soils are all benefited by liming or chalking and the two statements which have been made to the author, 'A load of chalk is better than a load of dung', 'Chalk the levels and leave the banks', would afford a useful guide to a stranger farming in this district. About half the country is under wood, the district being famous for beech, the tree typical of chalk formation.

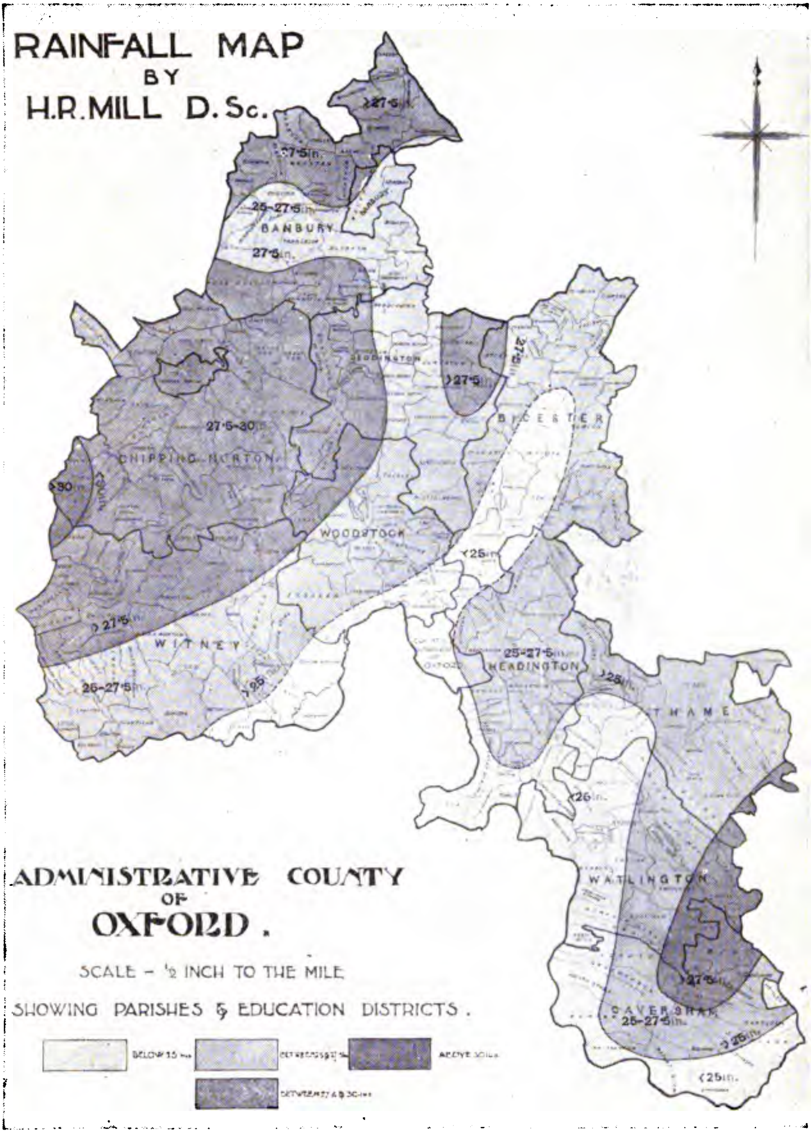
It is impossible in a short description of this kind to do justice to a district where almost every variation of soil may occur on the same holding.

North of the Oxford-Henley road the country changes somewhat and assumes rather more of the character associated with chalk. The gravel almost entirely disappears and where the chalk is covered by any superficial deposit it is the same reddish loam and clay found farther south. Along the edge of the escarpment much of it is heavily wooded, and it is not until the first terrace is reached that open chalk country is found. All the way from Goring to Chinnor there is the same expanse of open country, gradually decreasing in extent from SW. to NE. The soil is light to work and varies a certain amount in depth and character. It is in the main a soil suited for barley and sheep, but grows wheat and oats well.

In some districts, notably between Benson and Crowmarsh, the soil is heavier and stickier, becoming lighter and more typical higher up the hill. Hard chalk forms the subsoil in the majority of places, while in several districts considerable patches of gravel occur. These gravel soils afford a contrast to the chalk soils, and are locally termed red soil, while those in the chalk are known as white soils. The red soil burns in a drought, it responds to lime, but not in so marked a way as the upland gravel, and in a normal season hardly produces the yield that is obtained on the white land. From this line at the base of the Chiltern escarpment to Oxford lies the country described by Arthur Young as 'the area of the miscellaneous loams'—which would stand as a correct description if sands, clays and stonebrash are added to the loams. Two of the three great clay belts—the Gault and the Kimeridge clay—occur in it, and there is, in addition, much gravel and much sand as well as a small area of stonebrash.

There are small tracts of true alluvial soils along the banks of both the Thames and the Thame. These two alluvial areas differ a good deal in reputation, those of the Thames yielding small crops of indifferent hay, while the meadows of the Thame, especially in the neighbourhood of Waterstock and Thame, are accounted some of the best in the county.

A large area of this district is covered with a red soil resting upon the valley gravel. This is everywhere a useful


RAINFALL MAP
BY
H.R.MILL D.Sc.
ADMINISTRATIVE COUNTY
OF
OXFORD.
SCALE – ½ INCH TO THE MILE
SHOWING PARISHES & EDUCATION DISTRICTS.
BELOW 25 ins
BETWEEN 25 & 27½ ins
ABOVE 30 ins
BETWEEN 27½ & 30 ins
>27·5in.
27·5in.
25–27·5in.
BANBURY
27·5in.
DEDDINGTON
>27·5in.
27·5in.
BICESTER
27·5–30in.
CHIPPING NORTON
>30in.
<30in.
WOODSTOCK
<25in.
>27·5in.
WITNEY
25–27·5in.
>25
OXFORD
25–27·5in.
HEADINGTON
>25in.
THAME
<26in.
WATLINGTON
>27·5in.
CAVERSHAM
25–27·5in.
>25in.
<25in.

two-horse land, the only drawback to which is that it is shallow and apt to burn in a drought. In a suitably moist season large yields of most crops can be obtained. This soil occurs in considerable extent at South and North Stoke, Benson, Shillingford and Warborough, Dorchester and Drayton St. Leonard, with small patches at Clifton Hampden, Shirburn, and between Ascot and Chalgrove. It differs from the gravel of the Upper Thames valley in being mostly composed of flints and in the fact that it is, on the whole, a deeper soil and not so liable to dry out in the absence of rain. Along the bottom of the hills, north-west of the chalk country, a heavy sandy loam is met with, capable of growing most crops. It is somewhat difficult of cultivation, poaching badly in wet weather and being liable to crack in drought. It passes insensibly into chalk on the one hand and into the heavy Gault clay to the north-west on the other. This heavy clay, which underlies a great deal of the valley gravel, is mostly under permanent grass of excellent quality for both feeding and dairy purposes. The soil is inclined to crack, and where cultivated it is hard to work and difficult to manage, though less so than the other clays farther to the north-west; when skilfully managed large crops can be obtained. This clay is found on the hills in the neighbourhood of Warborough, Newington, and Berrick. East of Chalgrove the clay extends from north-west of Stoke Talmage to Standhill and round Tetsworth and Sydenham.

Near Culham, Nuneham Courtney, and Clifton Hampden a deep sandy soil is found, easily worked by two horses, which does not burn badly and which pays for liberal treatment. Farther north, between Nuneham and Marsh Baldon, there is a coarse gritty sand which is also very useful land. The soil round Little Milton, Great Milton, Great Haseley, and Little Haseley is composed of small areas of gravel, stonebrash, and sand. Nearer Oxford, on the hills between Garsington, Cuddesdon, and Shotover, the soil is mainly stonebrash and sand.

Everywhere in the valleys in this region, except close to the Thame itself, is a heavy Kimeridge clay—nearly all in grass of moderate quality, though much better in the neighbourhood of Waterstock, where it is much altered by superficial deposits, than it is between Denton and Sandford. Some of the best grass-land in the country is found in the neighbourhood of Thame, Waterperry, where the clay is considerably modified by deposits of sand and gravel. Farther north, near Menmarsh, where the Oxford clay is first met with, much of the country is under wood, and the soil is very cold and wet and the grass poor, and it gets progressively poorer to the north in the valley between Studley and Beckley, until Otmoor is reached.

Nearer Oxford the high ground between Elsfield, Beckley, Forest Hill, Stanton St. John, and south-east to Holton is composed of coarse sandy soils and of stonebrash. They are very much mixed together and the stonebrash is, on the whole, lighter and less sticky in character than that in the north. It is excellent sheep land. The sand, which is managed in much the same way as the stonebrash, is a very different soil. It is very coarse, but deep, and consequently usually withstands drought better than the brash. It carries sheep, but they do not do nearly so well as on the limestone land. Soil of the same character is met with in a strip running from Sandford-on-Thames and Iffley through Cowley, Bullingdon and Headington to Shotover Lodge. Being so near to Oxford it is extremely valuable for market gardening purposes, for which it is extensively employed. Down the slope of the hills towards Marston, Woodstock, and Otmoor, cold heavy Oxford clay soil is found which is all down to grass of indifferent quality.

South-west Oxfordshire.

Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
Alluvium.	Black, peaty soil. Mostly under rather poor grass.	Along course of Thames and tributaries; nearly all subject to flooding.

SOUTH-WEST OXFORDSHIRE (*continued*).

	Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
	Valley Gravel.	Limestone gravel, mostly light, dry soils; good sheep and barley land.	Patches round Long Hanborough, Eynsham, Stanton Harcourt, Northmoor, Standlake, Aston, Bampton, Grafton, Langford, Kelmscott.
	Plateau Gravel.	Pebbly loam.	Freeland.
Jurassic.	Oxford Clay.	Soil shallow, very stiff yellow clay, mostly under poor grass, though some cultivated, in places containing many pebbles.	Barnard Gate, Eynsham Hall, New Yatt, Cokethorpe, Yelford, Lew, Curbridge, Little Faringdon.
	Cornbrash.	Variable stonebrash soil, excellent sheep and barley land.	Broughton Poggs, Filkins, Kencott, Brize Norton, Curbridge Down, Witney, Hailey, Northleigh.
	Forest Marble.	Variable stonebrash and some heavy clay.	Filkins Downs, Holwell, Broadwell Grove, Kilkenny Farm, Wychwood Forest, Ramsden.
	Great Oolite.	Variable stonebrash, excellent sheep and barley land.	Westwell, Burford, Taynton Down, Minster Lovell, Crawley, Cornbury Park, Wychwood Forest.
	Inferior Oolite.	Light stonebrash, excellent sheep and barley land.	Narrow outcrop on slopes above river valleys Evenlode and Windrush, Shorthampton, Chilson.
	Upper Lias Clay.	Heavy clay soil.	Narrow outcrop on slopes above river valleys Evenlode and Windrush, Idbury, Fifield, Tangley, Fulbrook.
	Marlstone.	Red stony soil, useful, light, arable land and good grass land.	Narrow outcrop adjoining Upper Lias, Taynton, Fifield, Shipton-under-Wychwood.
	Lower Lias.	Heavy clay.	Upper Evenlode valley.

The soils of South-west Oxfordshire may be divided into four main classes according to the type of geological formation upon which they rest, namely, alluvial soils, gravels, clays, and stonebrash. The alluvial soils are found in strips of varying width lying upon the banks of the rivers Thames, Windrush, and Evenlode, and are derived from the material which is geologically most recent. The gravel soils lie upon deposits of so-called valley gravel which cover a large area of the Upper Thames valley between Oxford and Lechlade. The Oxford clay occupies the remaining portion of the valley and runs up the slopes of the higher ground to the north, until the limestones, which are typical of the Cotswolds, begin to make their appearance, giving rise to stonebrash soils.

The alluvial soil lies close to the river in stretches of larger or smaller extent, from Port Meadow, at Oxford, to the Gloucestershire boundary near Lechlade. It roughly corresponds to the area which is at the present day subject to flooding. The soil is black and contains a large quantity of organic matter, and is for the most part down to grass, though where it is cultivated it is described as stiff two-horse land, difficult to manage, because it lies so very wet in winter. If worked wet it is apt to cake rather badly, but all the same it seems to be a more productive soil where it is cultivated than where it is under grass. By far the greater part, however, of the true alluvial soil is down in permanent grass, which is very disappointing both as regards quality and quantity, very few of the Thames meadows yielding anything more than a rather small cut of indifferent hay. The same thing is true of the meadows on the banks of the Windrush and the Evenlode, where these are on alluvial soil. It is very generally reported also that all attempts to improve the yield and character of the herbage have been unsuccessful, which may be due to the fact that they suffer so much from flooding that none but the coarser kinds of grass are able to hold their own.

The meadows situated on the Cherwell alluvium seem to be distinctly better, though even here in the majority of cases the yield of hay is not as large as would have been expected. In addition to these strips of land on both sides of the river courses, some of which in the Upper Thames valley are nearly two miles wide, there occur on almost every farm in the valley patches of what is described as black soil. These, though actually small in area, are often of considerable importance to the individual holding. They occur by the banks of small tributary streams, and doubtless represent deposits of the same character as those in the main valleys. The principal effect of these is to modify the character of the typical soil of the district, whether clay or gravel. The organic matter very greatly facilitates the working of the clay, and the result is the production of a good loam, which is especially valued for the growth of oats and mangolds. On some dairy farms the black land is retained for the special purpose of growing a large mangold crop. It cannot be said that these soils conform to any definite type, for the depth of the deposit and the character of the subsoil cause great variations, but everywhere there is sufficient modification of the prevailing characteristics to be of some local importance.

The gravel deposits of the Upper Thames are highly important from the agricultural point of view, and are responsible for the arable farming and the sheep, which are so characteristic of the district. The gravel lies on well marked terraces for the most part above the level of the present flood area, and it consists of rounded limestone pebbles derived from the rocks to the west and north. The deposits vary considerably in depth, and this is mainly responsible for the difference in agricultural characteristics, the soils varying from a pebbly clay to the sharpest and driest of gravels. If the gravel deposits are thin, the soil on the surface is a good medium loam, which is sometimes difficult to work in wet weather and is too sticky to carry sheep in the winter, and will withstand a certain amount of drought. From this extreme all stages may be met with to the other extreme where the soil is very shallow and rests upon the pure sharp gravel. The soil is more of a loam in the neighbourhood of Cassington and Aston, and there is a great deal of sharp gravel to the north of Bampton and from there to Lechlade, and also in the neighbourhood of Stanton Harcourt.

It is difficult, however, to associate variations of this kind with any particular region, as where variations are due to causes of this sort many such will occur on the same farm and possibly even on the same field. The typical gravel soil is one that is very free working, always two-horse land which can be cultivated in almost any weather. Drainage takes place very rapidly, and although water is constantly so near the surface, the open character of the subsoil prevents the top soil from being supplied from below, so that agriculture on these soils is very dependent upon rainfall at regular intervals during the growing season. A distinction is frequently made between soils resting on yellow gravel and white gravel subsoils, the former resisting drought usually rather better than the latter, which are reckoned among the most speculative soils of the district.

As the gravel consists mainly of rounded limestone pebbles, consequently the soil is normally well supplied with lime.

There is another soil derived from the Plateau gravel of the geologists, which gives rise to soil of a very different character. The soil, which occupies a considerable extent of country at Freeland and near Church Hanborough, is spoken of locally as a pebbly loam and is usually a deep loam containing a number of quartz pebbles; it is difficult to work in wet weather, but yields good crops in a suitable season. It is also affected by dry weather but not nearly to the same extent as the true gravel. It is too sticky to carry sheep in the winter.

The whole of the valley of the Upper Thames rests ultimately upon Oxford clay, though, as much of it is covered by superficial deposits of valley gravel, the clay does not come to the surface except at a considerable altitude and far from the river. In this respect it offers a marked contrast to the Berkshire side, where the steep escarpment brings the clay down almost to the banks of the river.

It is a typical heavy clay which is not much cultivated except in some area where slight modifications have led to a small improvement in texture. The grass is of very moderate character, but is capable of considerable improvement, and drainage and the liberal use of basic slag have so far proved to be the most satisfactory methods.

The clay is finest and most difficult in the neighbourhood of Curbridge and Lew, while through North Leigh and Hanborough, South Leigh and Cassington, considerable quantities of quartz pebbles very similar to those at Freeland are found, which to some slight extent alter its character. As very few farms entirely on the clay are completely in grass, it is possible to see in this district examples of successful cultivation of this class of soil, the most notable examples being found between the villages of North and South Leigh. Every advantage has been taken of local conditions tending to make the soil easy to work, but the management of this type of land remains a difficult and hazardous business. Success is well rewarded by the size of the crops obtained.

North-west of the Thames, on reaching a certain elevation, the aspect of the country changes completely. Hedges and grass disappear, and stone walls and cultivation mark the border of the extensive stonebrash district, which includes most of North Oxfordshire and stretches all over the Cotswolds.

West of Witney the country slopes up very gradually from the Thames valley to the ridge along which the Oxford-Cheltenham road runs. The valley of the Windrush here is deep and the ground rises sharply to the high and bleak uplands forming the watershed between it and the neighbouring valley of the Evenlode. It is a country which is famous for sheep and which grows excellent barley. It is a remote country, where farms are large and where transport is difficult. Ninety per cent. of the soil is so-called stonebrash, in the main a thin soil containing much broken limestone, and resting upon limestone rock. Three separate geological formations—the Cornbrash, Forest Marble, and Great Oolite—are responsible for the stonebrash soils. From the agricultural point of view it is impossible to differentiate between these formations, as similar variations of soil character obtain equally in them all. They are all referred to under the head of stonebrash.

In general three types of stonebrash soil can be distinguished, which are sometimes separated out in districts but which often may be found together on the one farm. The three types may be labelled light, medium, and heavy stonebrash. The first is usually a red-coloured, light soil, containing much stone, and not more than four to five inches in depth. It can be worked in any weather and will carry sheep well at any time of the year. Crops are light and are very dependent upon the rainfall. This land always occurs on the steep banks, from which the finest particles of soil have been washed away, otherwise it is probably of more frequent occurrence in the southern portion of the district, although some land of this character is found on most stonebrash farms. The medium stonebrash is the soil that probably is the most common in the district. It is a deeper and a darker soil with fewer stones in the surface. The stones also are more lumpy and less like broken china. It is essentially a sticky soil, which resents any cultivation when wet and is difficult to deal with if tilth has once been lost. In spite of this it is most useful sheep land, sheep grow bigger and fatten better upon this land than upon any other soil in the county, though where sheep are everywhere it is difficult to point out any areas which are specially excellent.

The third type, which is frequently known as sour stonebrash, has often more of the characteristics of a clay. It always contains fewer stones than the other types of soil, and the subsoil is either a yellow or white clay more or less mixed with limestone. It is essentially not sheep land, though where only small patches of this land occur they are folded with the rest. Wheat and beans seem to be best suited to this type of soil. This sour stonebrash is found in largest amount in the extreme west of the county, mostly in patches on the high ground. What would appear to be a variation of it is found in Wychwood Forest and on the high ridge between the rivers Evenlode and Windrush. Much of the land here has been reclaimed from Wychwood Forest, and the soil is known locally as Forest soil. It has much of the character of clay, is black in colour, owing to a considerable quantity of humus, and on it are found many quartz pebbles similar to those occurring at Freeland. It is cold and late country of bad reputation. It lies within the area Minster Lovell, Charlbury, Ramsden, and North Leigh. The grass-land is extraordinarily poor, and the arable land presents many of the difficulties of a clay without its compensating advantages, and only on a very few farms did soil of this character seem to produce large crops.

Most of the farms which lie to the south of the Windrush contain, in addition to the stonebrash, some grass-land either on the Oxford clay of the Thames valley or on the alluvial soil of the Windrush. A comparatively small number consist wholly of stonebrash, which in this district is fairly light, except in the neighbourhood of Holwell, where a heavier soil is met with.

Between the Windrush and the Evenlode a typical farm runs in a long strip from the river valley up to the highlands of the watershed, and because of this contains several types of soil. The strip may be narrow and more than a mile or so in length.

In the region from Witney to Burford the alluvial soil of the valley is succeeded by stonebrash and forest soil on the high ground. From Burford to the county boundary the valley is generally red soil, the character of which much depends upon its extent; if large it is generally cultivated and shows many of the properties of similar soils in the northern part of the county round Banbury; if small it is down in grass, which is generally of better character than the clay grass, and which may sometimes be valuable feeding land. Above this is a narrow belt of clay, and above that the stonebrash in one of its many forms.

There are a few farms which rest entirely upon the stonebrash, but these are not nearly so common here as they are farther east, across the Evenlode and Cherwell.

Crossing the watershed into the Evenlode valley, round Leafield and westwards to the Shipton-Burford road, the soil is varied, some being forest soil of the character already described, and some ordinary medium stonebrash. The former occupies the larger portion of the eastern end, and the latter the western end. The Burford-Stow road, where it runs over Taynton down from Burford to Idbury camp, is entirely on stonebrash, heavier and deeper near Burford, and shallower and more stony near Idbury. The valley running parallel to the road on the western side from Taynton through Tangley contains a variety of soil in thin strips.

The soil of the upper Evenlode valley is dealt with in the next section.

NORTH-WEST OXFORDSHIRE.

	Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
	Alluvium.	Black soil, poor grass in Thames and Evenlode valleys, better in Cherwell valley.	Port Meadow, Wolvercote, Oxey Mead, Valley of Thames and Evenlode, Watereaton, Kidlington, and valley of Cherwell.
	Valley Gravel.	Sandy and gravelly, soils variable in character.	Oxford, Upper Wolvercote, Thrupp, Begbroke Hill, Cassington, Yarnton, Purwell Farm.
Jurassic.	Oxford Clay.	Heavy clay soil, nearly all rather poor grass.	Gosford, Kidlington, Begbroke, Burleigh Farm.
	Cornbrash.	Variable, mostly light stonebrash, good sheep and barley land.	Bladon, Campsfield, Woodstock, Sturdy's Castle, Thrupp.
	Forest Marble.	Variable stonebrash.	Blenheim Park.

NORTH-WEST OXFORDSHIRE (*continued*).

	Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
Jurassic.	Great Oolite.	Stonebrash, varying from heavy wheat land to very shallow dry soil, excellent for sheep; grass very poor.	Stonesfield, Wootton, Ditchley, Hopcrofts Holt, Glympton, Kiddington, Lyneham Barrow, Chadlington Downs, Wescot Barton, Dunstew, Tackley, Nethercot, Enstone.
	Northampton Sand.	A sandy stonebrash. A poor sandy soil of bad reputation.	Between Enstone and Chipping Norton, Heythrop Park, Over Norton Common, Great Rollright, Sandford St. Martin, Steeple Aston, N. Aston.
	Inferior Oolite.	Useful light stonebrash, fairly uniform and good sheep and barley land.	Narrow outcrop above Evenlode valley, Charlbury, Taston, Spelsbury, Dean Chadlington, Pushcote, Sarsden, Churchhill, Chipping Norton, Over Norton.
	Upper Lias.	Heavy clay, much affected by limestone débris.	Narrow outcrops above valleys of Evenlode from Fawler to head of tributary above Chipping Norton. The Cherwell valley from Rousham to N. Aston. All the upland clay in the north of this section.
	Marlstone.	Red ironstone soil. Excellent corn land, where deep, shallow and stony in places.	Hempton, Barford, St. Michael and St. John, Deddington, Swerford, Hook Norton, Adderbury, Bloxham, Milcomb, Bodicot, Broughton, Banbury, Swalcliffe, Shutford, Balscott, Drayton, Shenington, Little Rollright, Salford, Great Tew, Upper Worton.

North-west Oxfordshire (*continued*).

	Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
Jurassic.	Lower Lias.	Heavy clay.	The valley bottoms of N. Oxfordshire, Nether Worton, Upper Cherwell valley, Banbury, Horley, Alkerton, Ascott-under-Wychwood, Shipton-under-Wychwood, Kingham.

The soils of the central area are very similar to those of the area which has just been described.

Outside Oxford there is a district bounded by the alluvial meadows of the Thames and the Cherwell, those of the Thames poor and growing coarse hay, those of the Cherwell distinctly better and giving some very fine grass-land between Oxford and Islip. The main clay area lies between Oxford on the south and a line drawn roughly through Bladon, Begbroke, Kidlington, and Islip, but even here there is very little clay which is not more or less modified by some superficial deposit, mainly by deposits of river gravel similar in character to those in the Upper Thames valley, which have already been discussed, but partly by an admixture of pebbles like those found at Freeland, and by a sandy loam, near Yarnton and Begbroke, which makes an excellent barley soil. There is much typical poor grass between Cassington, Bladon, and Kidlington, though it is only farther east that grass becomes really a feature of the landscape.

The stonebrash soils which begin to make their appearance before Woodstock is reached show very much the same character as those of the western section. There is nothing here quite corresponding to the forest soil, and the sour brash is more local and patchy, the medium brash being again much the most frequent. On the whole, the farther north the heavier is the brash, though many exceptions can be found.

The country north of Woodstock, between the Oxford-

Chipping Norton and Oxford-Banbury roads, is much cut up into steep combes by the Glyme and its tributary streams. The soil is naturally heavy in the bottoms and very shallow on the steep banks. There is a certain amount of poor shallow land in permanent grass, which is undoubtedly capable of improvement but which is very dependent upon a moist growing season. It is in the main a sheep and barley district, except where the heavy and sour brash makes sheep impossible and wheat better than barley.

Though the soil is not really suitable for potatoes, many are grown in the neighbourhood of Kiddington, Stonesfield, and Wootton, all the necessary labour being obtained from Stonesfield. The yields are small, but the quality is excellent. Farther north, on the western side of the district, the stonebrash is succeeded, shortly after passing Enstone, by a sandy brash which, near Chipping Norton and on the Chipping Norton and Banbury road, passes into a blowing sand. The whole of this soil on the western side has a bad reputation; on the eastern side in the neighbourhood of Sandford, Dunstew, and Steeple Barton it is distinctly better land. The local reputation is that it never finishes a crop. All kinds of crops start, come along well, and then suddenly collapse, and no amount of manurial treatment appears to overcome this fault.

On the eastern side these soils are succeeded by some of the best land in the county—the red land in the region of Adderbury, Deddington, and Banbury. This ironstone soil, as it is called locally, covers a large extent of North Oxfordshire, and varies a great deal in its reputation, the land in the extreme north-western end of the county near Shenington not being nearly so productive as that round Banbury.

It is all a stony land varying much in depth, the better land being always the deeper, and the poorer land being very close to the ironstone rock. It carries sheep well and grows them fairly big, though not so well as the stonebrash. Still sheep, as elsewhere in northern Oxfordshire, are the prominent feature of the farming. This red land runs in a thin strip round the western side of the county, sometimes over the Gloucestershire side of the boundary and sometimes on the Oxfordshire side, but it is only in the north that considerable stretches of it occur. Where it is deep the soil is very resistant to drought and is nearly always two-horse land. It responds to intensive farming and liberal manuring, and in that way affords a contrast to the Cotswolds and stonebrash country which, on the whole, do not. The largest areas of this soil occur in the triangle Deddington, Milcomb, Banbury, round Hook Norton, and north-west of Banbury at Drayton, Hanwell, Wroxton, Balscott, and Shenington.

The upper Evenlode valley from Shipton to Kingham, which is wide and open, consists partly of clay and partly of patches of gravel and sand; of the latter, much is in tillage, while most of the clay is under permanent grass. The clay is Lower Lias and the gravel and sand are superficial deposits probably of glacial origin. The same clay persists to Chipping Norton, and is identical with that which is met with in all the valleys of northern Oxfordshire. From Shipton to Charlbury the valley is much narrower, and the area of clay, though it persists nearly to Charlbury, is much smaller. All of it is under grass and much of it is of good quality. In the area bounded by Chipping Norton, Great Rollright, Tadmarton, and Sibford Gower, the soil varies continually, but is mainly composed of stonebrash, red soil, and sand, the properties of which are very similar to those of the soils of the upland districts which have already been described.

The whole of the valleys of North Oxfordshire are clay and are mostly in grass which varies very much in quality; for whilst there is much feeding land, and much excellent dairy grazing, there are also a number of clay hills in the neighbourhood of Shenington carrying a poor herbage, capable of much improvement by basic slag.

The alluvial grass-land of the Cherwell is good, and where it is not too wet gives hay of good quality, contrasting favourably in this respect with the Thames and the Windrush. Nearly all the grass-land, with the exception of the river meadows and the best feeding land, shows great improvement from the use of basic slag. Some of the best grass-land is found at the junction of the red soil with one of the clay formations, and generally speaking the valley clay, which is here the Lower Lias, gives better grass than the Upper Lias of the uplands.

East of Cherwell.

	Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
	Drift.	Very variable, much gravel.	Goddington, Newton Purcell, Hardwick, Hethe, Skelswell, Finmere.
	Alluvium.	Dark peaty soil, very heavy and sticky in Ray valley and in Otmoor.	Cherwell valley, Ray valley, Otmoor.
Jurassic.	Oxford Clay.	Mostly bearing clay, some patches of lighter soil.	Islip, Bletchingdon, Hampton Poyle, Kirtlington, Weston-on-the-Green, Wendlebury, Launton, Whitecross Green, Arncot, Piddington, Blackthorn.
	Cornbrash.	Variable stonebrash soil.	Islip, Charlton-on-Otmoor, Merton Ambrosden, Blackthorn Hill, Kirtlington Park, Middleton Stoney, Chesterton, Bicester, Bucknell, Caversfield, Stratton Audley, Fringford.
	Forest Marble.	Heavy stonebrash soil.	Only small outcrops at Islip, Oddington, and N. of Bicester.
	Great Oolite.	Variable stonebrash soil.	Caulcott, Fritwell, Ardley, Stoke Lyne, Upper Heyford, Somerton, Cottisford, Mixbury.
	Northampton Sands.	Sands and sandy stonebrash, useful easy working soil.	Upper Heyford, Souldern, Somerton.

East of Cherwell (*continued*).

	Geological Formation.	*Soil.*	*Towns, &c., on Formation.*
Jurassic.	Upper Lias Clay.	Clay soil much affected by débris from limestone rocks above.	Narrow outcrop above Cherwell valley from Northbrook bridge to Oxfordshire boundary.
	Marlstone.	Red ironstone soil.	Narrow outcrop in Cherwell valley from Lower Heyford to Oxfordshire boundary.

The district east of Oxford and the Cherwell and north of Bicester is in some respects the least interesting in the county, although the area between Bicester and the hills on which Beckley and Studley are situated includes land which offers possibilities and presents problems to be found in no other part of the county.

In an ordinary winter from the heights of Beckley and Studley the country to the immediate north presents the appearance of a large lake. This expanse of flood is Otmoor and the lower valley of the Ray.

Otmoor itself is such a distinct district and so completely different from the adjoining country that it merits special consideration. It comprises a stretch of about 3,850 acres, all of which is very little above the level of the river Ray, and, as described elsewhere, is very subject to flooding owing to the narrow exit at Islip. The soil consists of alluvial material brought down by the river Ray and deposited upon an Oxford clay basis. The deposit is of extraordinary fineness, and probably represents the washings from Oxford clay near the source of the river. The vegetation consists of coarse grass for the most part, though there is considerable variation in the herbage all over the moor. The eastern side of the moor is considered to be much better than the western, and further differentiation is made between what are called 'lakes' and 'knobs'. The 'lakes' are the portions which are always liable to flood, and which produce coarse hay, most of which goes to the towns. These are naturally suited best by a dry season. The 'knobs' are rarely flooded, and grow a much better herbage, but they do not yield well if the weather is dry. There is very little cultivation on the moor itself now, though drier parts were at one time under the plough. One or two fields round the edge in the neighbourhood of Murcot and Fencot yield large crops, but require frequent fallowing to keep them in good order. The improvement of the grass presents a difficult problem, and it may be questioned, even if the land could be satisfactorily drained, whether this type of soil could ever carry a good herbage. At present it is unapproachable in the winter, and in the summer it bakes very hard and cracks badly, but applications of basic slag and of ground mineral phosphate have certainly benefited the grass on the southern side. There are occasional patches of sand round the edge of the moor which have lightened the clay and so made cultivation profitable.

The whole district from Elsfield and Beckley to the Oxford-Bletchley branch of the L. & N.W. Railway is a country of poor grass which improves in quality to the north, becoming useful dairy land in the neighbourhood of Blackthorn and Ambrosden.

The line of hills beginning at Islip and continuing to Oddington, Charlton-on-Otmoor, Merton, and Ambrosden, affords a marked contrast in soil to the clay. They are all stonebrash of varying depth and character, all being light and easy working compared with the surrounding soil, and being useful sheep and barley land. Farther north the clay country persists but becomes rather better, probably because it does not lie as wet as in the neighbourhood of Otmoor itself. The clay is typical Oxford clay, though on the whole not so heavy as in the Upper Thames valley; generally, wherever patches of sand or gravel occur, it is cultivated and yields big crops. The soil appears heavier near Hampton Poyle and Weston-on-the-Green, and lighter near Bletchingdon and Wendlebury.

To the north of Wendlebury and Bicester the stonebrash area is very similar to that of the middle section, except that there is more heavy and sour brash, and more clay. The heavy stonebrash is one of the most difficult soils to work. If not caught at exactly the right moment it dries into very hard clods and it rolls badly and clogs the plough.

There is a small quantity of sand in the northern portion of this section in the neighbourhood of Somerton; it is generally a fairly useful soil, with more body than the sand which occurs between Enstone and Chipping Norton.

In speaking of all three sections of northern Oxfordshire it should be remembered that the area of unmodified clay is small, and that in consequence it is essentially a country of arable farming; further, that sheep still form the mainstay of much of the agriculture. The best sheep soils are undoubtedly those of the light and medium stonebrash. The sheep are bigger, heavier, and generally do better than on any other soil in the district. The valley gravel soils and the red soils of the Banbury district are also good sheep land, better than the sands, but sheep do not thrive in quite the same way as on the limestone. Good barley is grown everywhere where sheep flourish, though the excellence of its quality will depend on the uniformity of the field, the lighter brashes producing the highest quality and the smallest yield.

As the country varies in elevation from 200 to 900 feet, so do the climate and the rainfall vary, and both of these factors must be taken into account in comparing soils of one district with those of another.

The greater part of northern Oxfordshire is bleak and cold, except in the valleys of the rivers which intersect it, consequently spring is later, and the growing season is somewhat shorter than in the more genial country between Oxford and the Chilterns.

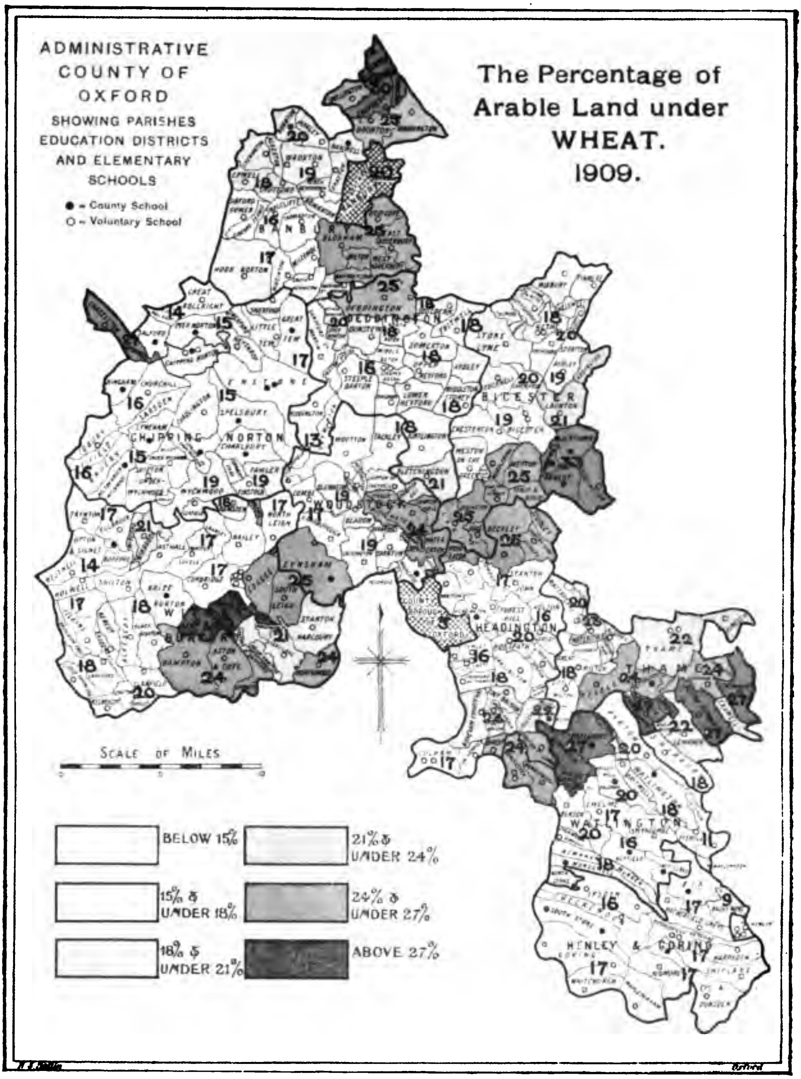
CHAPTER XI

CROPS

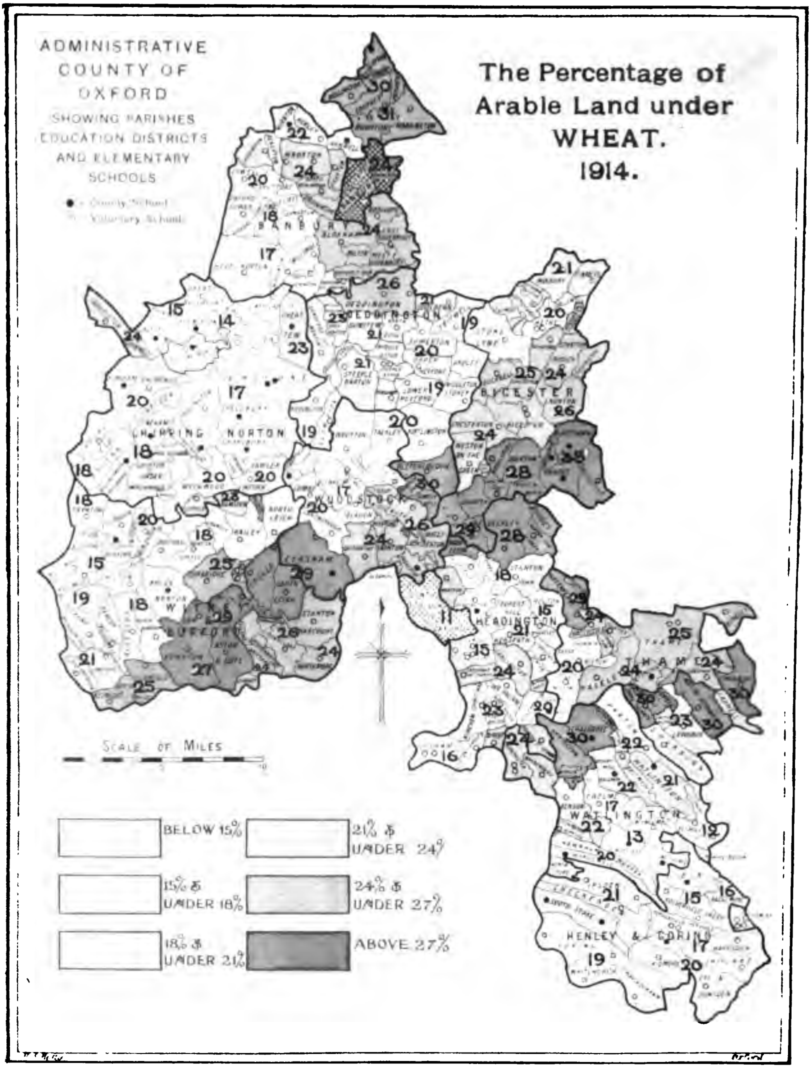
i. *Wheat.*

In spite of the competition from other countries, wheat is still regarded as the most important corn crop in Oxfordshire. The history of the crop as given in the agricultural statistics since 1866 shows a good many vicissitudes. From that year until 1872 there was a considerable increase in the number of acres under wheat. From the latter date until 1895, which was an abnormal year owing to the low price in 1894, there was a decrease, and from that year until the present time there has been a recovery, more constant and steady within the last seven or eight years. The relation of prices to the amount grown is interesting. In 1807 Arthur Young said that 'the general idea in this country is that if the average price of wheat falls short of 7*s.* 6*d.* per bushel, the farmers now must starve, and that they will not make a reasonable profit with that price, expenses have of late years risen so greatly'. Apparently the farmers during the last half-century were of a different opinion from their predecessors. Between 1866 and 1872 they increased the area under wheat by more than 8,000 acres, and the average price during these seven years was 55*s.* 3*d.* per quarter. During the next twenty-three years, from 1873 to 1895, a decrease of 42,176 acres took place, with an unusually sharp fall in the last year. The average price during these years was 38*s.* 11*d.* per quarter with 22*s.* 10*d.* and 23*s.* 1*d.* for the last two years. A more minute study of the connexion between the variations in prices and the production of wheat can be made by a comparison of the diagrams given in this chapter and the prices given at the end, but it may be seen in a general way how farmers accustomed to receive an average of 55*s.* 3*d.* per quarter were unable in fact to accommodate themselves to a fall which in the next twenty-three years makes the average 38*s.* 11*d.* This was the period during which farmers were taught the most severe lessons, and at the end of which they were in a mood to appreciate a price little more than half of that which was regarded as an indispensable minimum in 1807. The slight improvement which began in 1896 kept the area under wheat much more constant, and yet the average price from that year until 1906 was only 29*s.* 6*d.* per quarter. Last of all, the average price for the seven years from 1907 to 1913 was 32*s.* 9*d.* per quarter, and the area under wheat from 1907 to 1914 was on an average 6,000 acres per annum more than in the previous eleven years. Taking the situation as it stood previous to the war, it would seem that this price of 32*s.* 9*d.* per quarter was sufficient to enable and to induce farmers to make wheat-growing a larger part of their system. When they expressed an opinion on the subject, they were more modest in their demands than their predecessors, only saying that it did not pay to grow wheat at less than 40*s.*

With regard to the yield of wheat per acre, Oxfordshire fell below the average for England and Wales during the ten years 1904–13 by one-third of a bushel, the figures being 31·54 bushels for England, and 31·18 bushels for Oxfordshire. In 1807 Young estimated 'the average produce of the whole county at three quarters, exceeding rather than falling short'. In the century, therefore, if his estimate was accurate, there has been an increase in the yield of nearly one quarter per acre. This may be regarded as a creditable advance, when the difference in prices prevailing during the two periods is considered. For the seven years preceding 1807 the average price of wheat was 84*s.* 8*d.* per quarter, an excess of 51*s.* 11*d.* over the average between 1907 and 1913. This indicates that a high price by itself is not sufficient to secure the greatest production. The situation at midsummer 1914 seems to have been extremely sound. If the average yield of straw is assumed to be a ton to the acre, and its value to be 20*s.*, the crop of wheat at four quarters and 33*s.* per quarter would give a return of



The Percentage of Arable Land under WHEAT. 1909.



The Percentage of Arable Land under WHEAT. 1914.

£7 12*s.* per acre, and out of this gross amount the farmers secured a profit which encouraged them to devote a larger area to its production. Such a position was not only satisfactory, but it gave promise of stability which may not be realized for a long time.

The methods of cultivating for wheat have not altered much since Arthur Young's survey. As a crop in the rotation it generally follows clover leys, beans, or fallow, being frequently preceded by the two last on the stronger soils. In one important respect a change has taken place. A century ago there was an idea among farmers that wheat should be sown as early as possible, and it was a common thing for this operation to begin in the last week of July.[1] The practice was said to be the result of experiments. Now a quite different opinion prevails, and the one month of the year considered to be best for putting in wheat is October. The greater part of the crop is drilled, but when sowing is late, some farmers plough it in, as this protects it from damage by birds, and gives better results if the ground is wet. Horse-hoeing is not very general, the wheat being drilled too close in most cases to permit this. Rolling, hoeing by hand, and harrowing are the most common forms of spring cultivation. Hoeing not only keeps down the weeds, but provides a mulch, a loose covering of soil, which lessens the capillary action and retains more moisture. In almost every part of the county the soil is of such a nature that with spring droughts its surface 'cakes', forms a crust. In cases where the crop seems to be too far advanced and strong in spring, the old custom of folding sheep on it is still followed. With the four-course system—roots, oats or barley, seeds, and wheat—the farm-yard manure is used on the seeds for the wheat crop. With the seven-course system—roots, oats, barley, clover, wheat, beans, and wheat—it is applied to the roots and beans. Artificial nitrogenous manures are frequently used.

The most common varieties of wheat grown are the Squarehead's Master type and Blue Cone. The first are used even in spring, although Red Fife and Red Marvel are regarded as more likely to mature when sown late. The amount of seed used per acre is from two to three bushels, increasing with the stiffness of the soil and the lateness of sowing. Wheat occupies approximately the same proportion of the area under crops in every part of the county.

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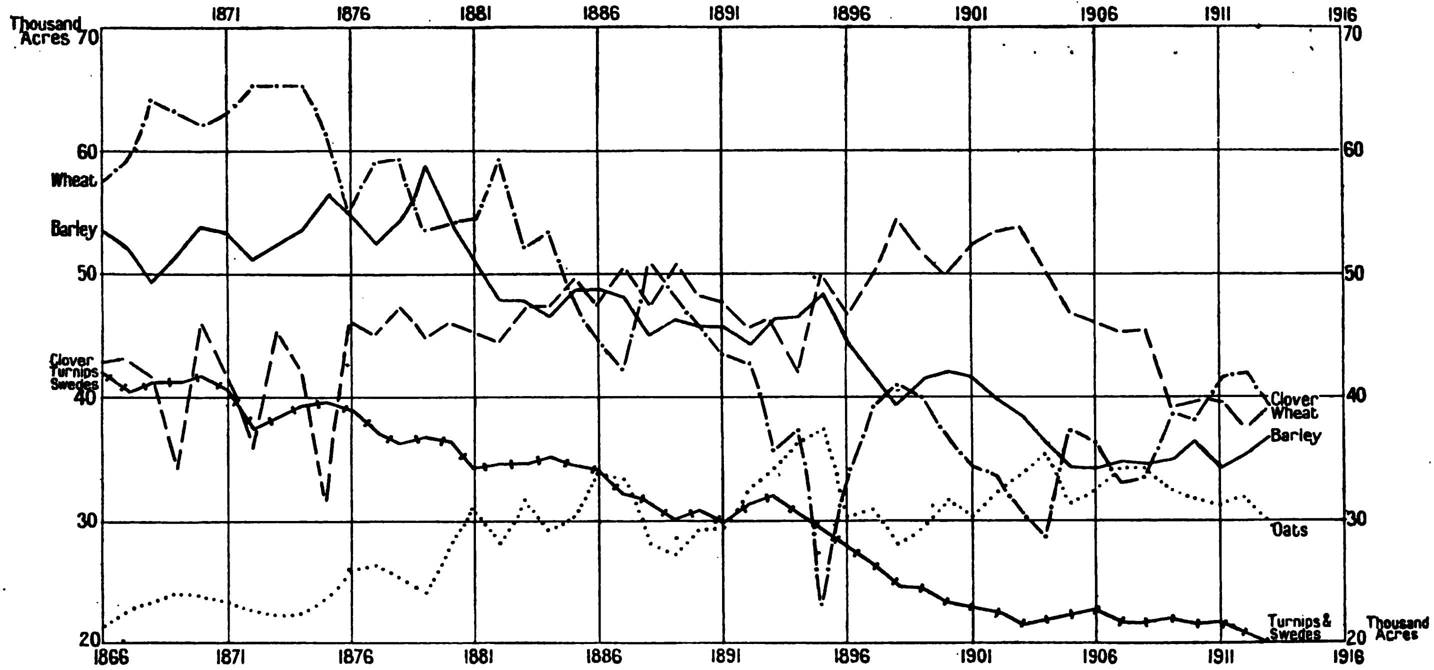
[1] Arthur Young's *General View*, pp. 144–5.

ii. *Barley.*

The market for barley is different from that for wheat, and therefore the fortunes of the crops have not been quite the same. Prices of barley have fluctuated less widely, and the extent of the areas devoted to growing it have been more constant. It was in 1879 that the largest area, 58,860 acres, was recorded, and since that time there has been a fairly steady decrease. The consideration which would weigh with farmers would undoubtedly be the relative returns from the crops. If the average yields of these as given in the agricultural statistics are taken, the returns per acre may be ascertained during two periods in which they were highest and lowest. Taking the ten years 1866–75, the average price of wheat was 6*s.* 10*d.* per bushel, and that of barley 4*s.* 11*d.* In the ten years 1891–1900, the prices were 3*s.* 6*d.* for wheat and 3*s.* 1½*d.* for barley. The average number of bushels of wheat grown per acre is 30·77 and of barley 32·67. Therefore in the first period of ten years the return from wheat apart from straw per acre was £10 10*s.*, and for the second period it was only £5 7*s.* 7*d.*, while the corresponding figures for barley were £8 and £5 2*s.* From this it would appear that relatively barley was the more desirable crop during the depression. The average yield for England and Wales during the period 1904–13 was 33·07 bushels, and for Oxfordshire 32·77.

Barley usually follows either wheat or roots in the rotation. It is considered good policy to get it sown as early in spring as possible, although where the roots are being eaten off, sowing goes on till May. Most of the crop is grown to the west of the Cherwell, and on the stonebrash between that river and the eastern boundary of the county. On the

DIAGRAM SHOWING CHANGES IN THE AREAS UNDER DIFFERENT CROPS - 1866 - 1913



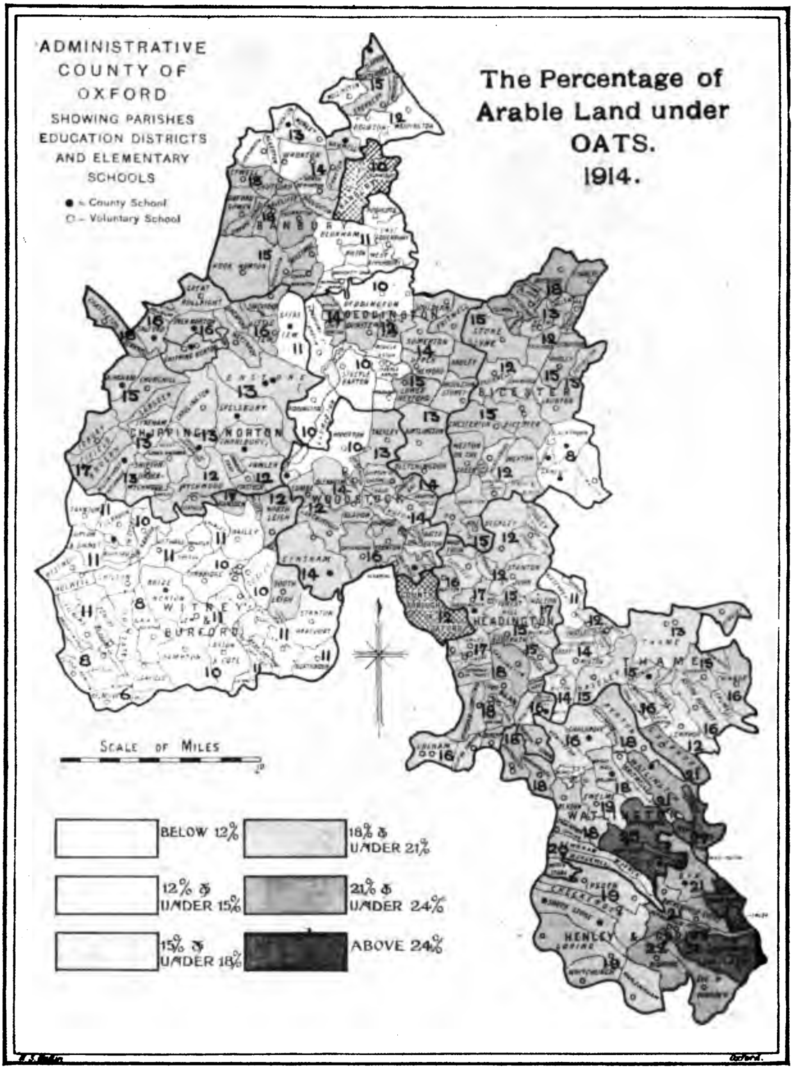
gravel at Kelmscott and Black Bourton, on stonebrash from Bladon and Begbroke, northwards to the fine district on the red soil between Banbury and Claydon, the area under barley equals that under wheat. Through the whole of South Oxfordshire the proportion is much less. The association of barley with sheep on the lighter soils is general.

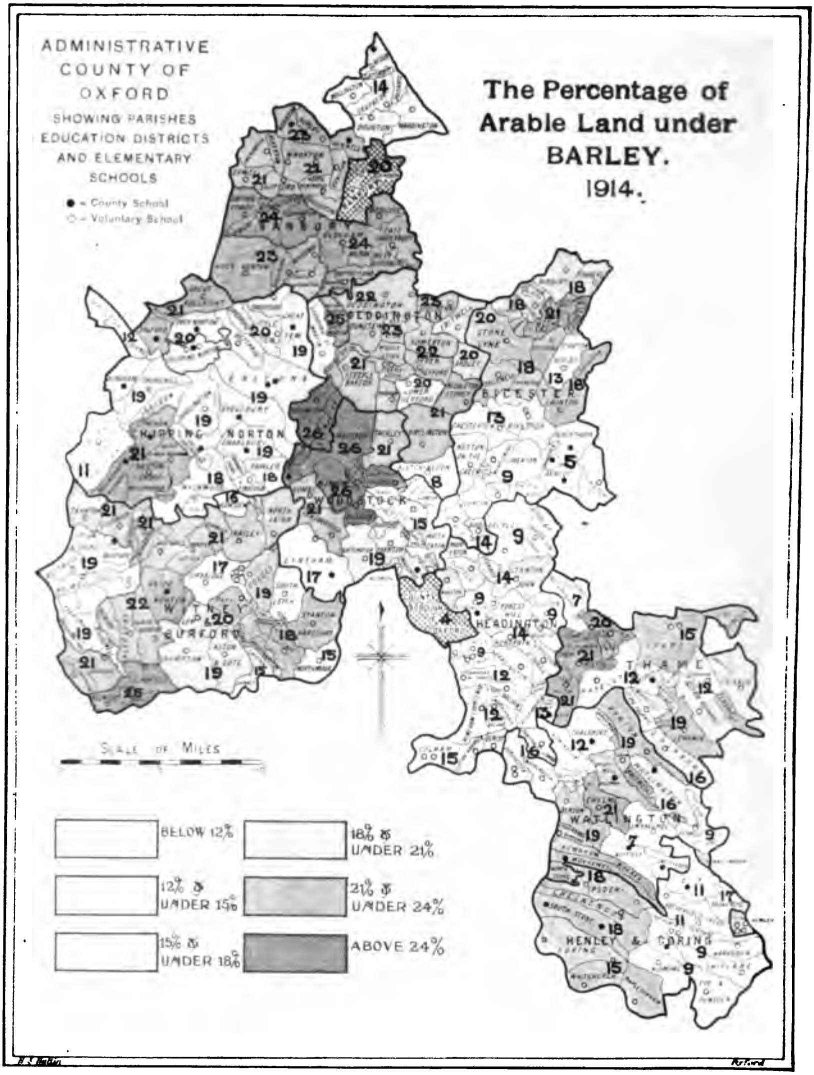
Arthur Young estimated the average yield in the county at four quarters per acre. By comparison with the average of 32·77 bushels for the ten years 1904–13 it will be seen that the increased production in the century only amounts to a little more than three-quarters of a bushel, a smaller achievement than in the case of wheat. The reasons which account for the difference are obscure. It may be that a hundred years ago the folding of sheep on the roots was more universal, the enthusiasm for this style of farming apparently having been handed down without interruption only in a few instances, mostly in the western part of the county. And it is doubtful if the use of artificial manure is so well understood or so effective that it can produce much better crops where sheep are not kept.

The seeds used are varieties of Chevalier. Oats and barley are not usually given any manure, except when they come as a second white crop. Then they receive a dressing of farm-yard or artificial manure.

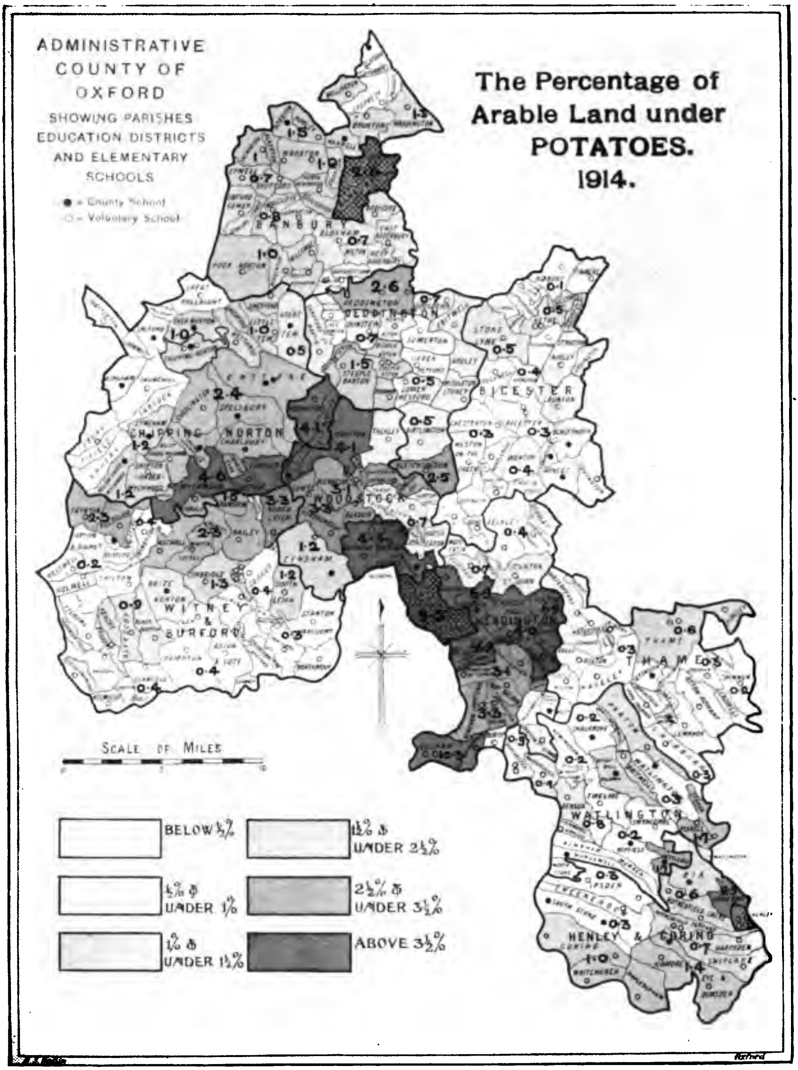
iii. *Oats.*

Oats are less important as a marketing crop than either wheat or barley, although in recent years the advantage in favour of the last may have been less decided. In spite of this they lost less ground during the depression than the other two corn crops, the period from 1866–1912 having been marked by a fairly steady increase in the acreage devoted to growing them. For the ten years 1866–75 the average return from an acre of wheat in Oxfordshire was £10 10*s.*, of barley £8, and of oats £6 9*s.* 2*d.*, taking the yield of the last at five quarters per acre. From 1891 to 1900, when wheat gave £5 7*s.* 7*d.* an acre and barley £5 2*s.*, oats only gave £4 7*s.* 1*d.* If the value of straw is taken

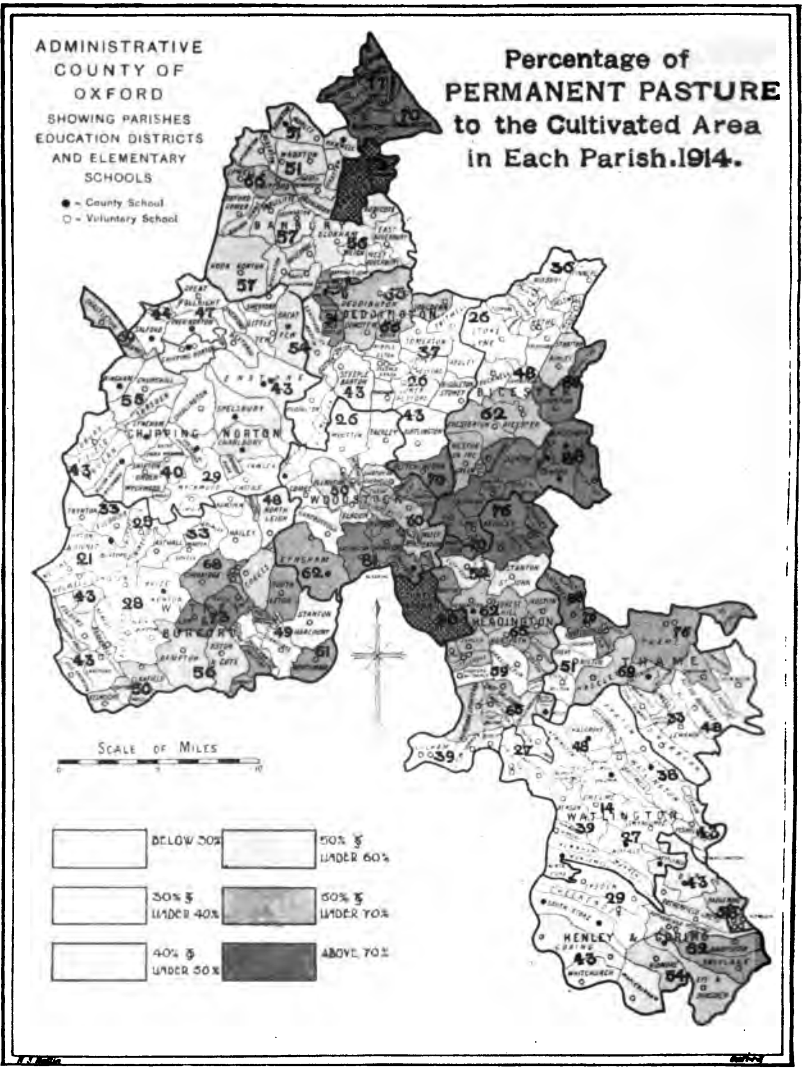

The Percentage of Arable Land under OATS. 1914.



The Percentage of Arable Land under BARLEY. 1914.



The Percentage of Arable Land under POTATOES. 1914.


ADMINISTRATIVE COUNTY OF OXFORD
SHOWING PARISHES EDUCATION DISTRICTS AND ELEMENTARY SCHOOLS
● = County School
○ = Voluntary School
Percentage of PERMANENT PASTURE to the Cultivated Area in Each Parish. 1914.
SCALE OF MILES
0
5
10
BELOW 30%
30% & UNDER 40%
40% & UNDER 50%
50% & UNDER 60%
60% & UNDER 70%
ABOVE 70%
BANBURY
DEDDINGTON
BICESTER
CHIPPING NORTON
WOODSTOCK
BURFORD
HEADINGTON
THAME
WATLINGTON
HENLEY & GORING
EYNSHAM
STANTON HARCOURT
HOOK NORTON
ENSTONE
STEEPLE ASTON
CHARLBURY
SPELSBURY
BAMPTON
BRIZE NORTON
WHITCHURCH
77
70
51
51
66
57
56
57
47
44
39
54
55
43
43
26
37
26
43
36
26
48
89
62
86
79
76
70
40
29
48
59
60
33
25
21
43
28
43
50
56
68
62
73
49
61
81
63
62
65
69
76
51
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65
39
27
48
33
38
48
14
39
27
45
43
29
58
62
45
54

into account, the balance in favour of barley might disappear. Since it is unlikely that the difference in the cost of producing wheat and oats is as great as the difference in the returns from them, the increase in the production of oats is probably due to their feeding value for live stock, most of the crop perhaps being consumed on the farms where it is grown.

Cultivation for oats is less exacting than for wheat and barley. It receives less attention. If roots have been eaten off by sheep in a wet spring, and the land is so trampled that it is impossible to get a fine tilth, oats have a better chance of succeeding than barley, and rather often they get a seed bed which is too coarse. In 1914 the weather was wet during the whole month of March. This was followed by drought which made most of the Oxfordshire land unworkable before the seed was got in. The frit-fly has been unusually destructive for three or four years, and to guard against these losses winter oats are now favoured by many farmers. Arthur Young estimated the average crop at five quarters per acre. According to the Agricultural Statistics the average yield for the ten years 1904–13 was 39·34 bushels, a slight falling off as compared with 1807, and less than that for England and Wales, which was 40·48 bushels for the same period. The distribution of the crop over the county varies inversely from that of barley, a larger proportion of the arable land in South Oxfordshire being under oats than in the other parts, the percentage being highest in the Chilterns.

The chief varieties of oats grown are Grey and Black Winter, Abundance, Giant Eliza, Bountiful, Newmarket, Leader, and Yielder.

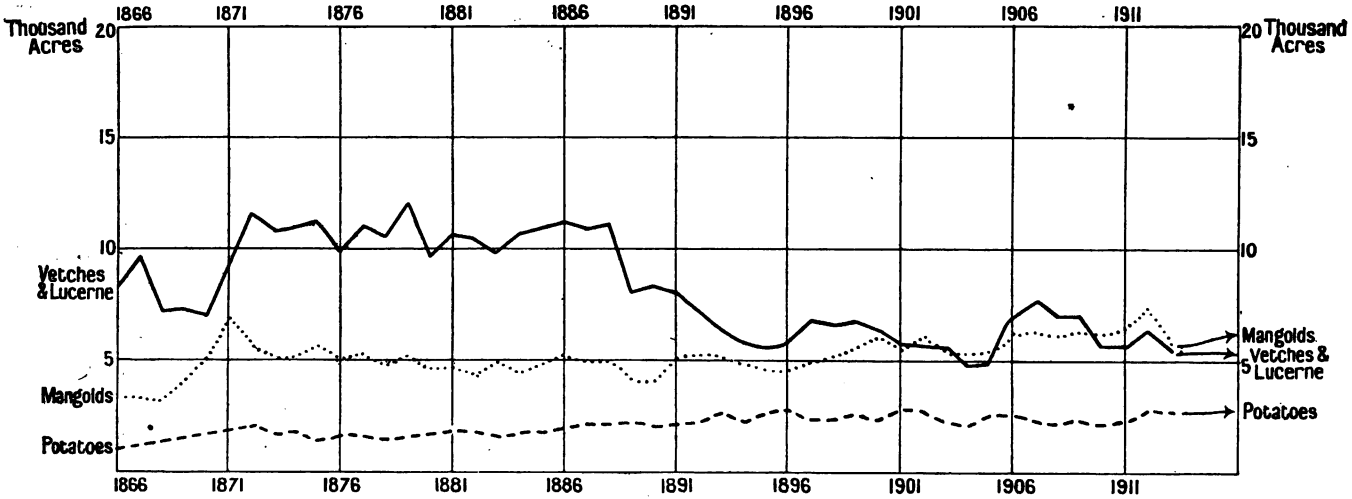
iv. *Beans and Peas.*

In the decline of cultivation, and the reduction in the area of arable land, these two leguminous crops have suffered curtailment more than others. There seemed to be little interest in the difficulties attending their cultivation, or in the prospects connected with their prices, except in one case where a farmer wished to change from a four-course to a five-course rotation, and thought of adding beans and potatoes. In 1875 beans and peas occupied 27,998 acres in Oxfordshire, but in 1914 the area had been reduced to 10,401 acres. The explanation of this reduction seems to be that beans and peas have for long been partly regarded as auxiliary crops, the former being grown chiefly to prepare the soil for wheat, to fix the atmospheric nitrogen. In the old days farmers depended on beans as their best form of concentrated foods. Now they can purchase a variety of these. Beans do best on heavy soils, and when these were put under grass the acreage under beans was diminished. Young states that in his experience of open fields and even of enclosures it was common to find beans following wheat, a practice which he criticizes as putting the cart before the horse. Another criticism of his which still applies was directed against the failure to clean the crop adequately. He said he had not seen a clean bean stubble in the county. This cannot be said to-day; for at South Weston on the malmstone, and on the strong red soil round Banbury, there were some perfect crops, but it is too often the case that the beans are left without hoeing, either by horse or hand, so far into the spring that the crop does not serve to clean the ground but rather to propagate weeds. Now that nitrogen can be supplied to the land by means of artificial manures the necessity for resorting to this circuitous method of procuring it is greatly diminished, and so far as this is a determining factor it is probable that the reduction will continue. The yield per acre of beans in Oxfordshire was 30·79 bushels for the ten years 1904–13, as against 29·51 bushels for England, and of peas the yields were respectively 28·22 and 26·69 bushels.

v. *Potatoes.*

This crop has made a sort of hesitating but steady progress. In 1866 there were 1,036 acres devoted to it, in 1914 this had increased to 2,464, and there is nothing in the present situation which makes it likely that this rate of

DIAGRAM SHOWING CHANGES IN AREAS UNDER VETCHES, LUCERNE, MANGOLDS, AND POTATOES



increase will be greatly accelerated in the immediate future. There has always been a prejudice against potatoes on the ground that they are an exhausting crop, and although such an objection may seem frivolous to farmers in other parts of the country who have grown them for many years, there is a sort of indirect basis for it in Oxfordshire. In spite of the number of bullocks fed there has perhaps never been enough dung produced in the county to bring the soil up to a standard at which it would crop steadily. There has been a comparative failure to get the proper mechanical conditions as much as the proper supply of chemical constituents. The liability of so much of the soil to burn owing to the open, porous bottom is an indication that it retains neither moisture nor other things essential for successful potato-growing. That is, to make this crop profitable on any considerable scale manuring would have to be done more thoroughly and heavily than it is done for the present crops, which would be an onerous undertaking, since no large supply of stable or city manure is available. These conditions may partly justify the theory of the old Oxfordshire farmers, which may amount to nothing more than a confession that their standard of manuring is not sufficiently high to meet the demands of the potatoes, and that they see no way of raising this standard.

It is possible therefore that the crop will only make very gradual progress until conditions alter to such an extent that it can take its place as part of the Oxfordshire system, if this ever becomes possible. The success of the experiments at Clifton Hampden, where 100 acres have been grown on one farm for several years, and at Stonesfield, where fifty and seventy-five acres are under potatoes on single holdings, proves that a few farmers have overcome the difficulties of cultivation. The average yield of potatoes per acre in Oxfordshire for the years 1904–13 was 4·68 tons as compared with 6·19 tons for the whole of England.

Owing to late frosts which do much damage in the county there is no attempt to get early potatoes, although early varieties are planted. In a few cases the custom of sprouting the potatoes in boxes before planting has been introduced. The most common varieties in use are Eclipse, Epicure, King Edward, Up-to-date, British Queen, Scottish Chief, Dalhousie, and Factor. Of manures farm-yard is the basis, and, in addition, where cultivation is good 3 cwt. superphosphate, 1 to 1½ cwt. sulphate of potash, and 1 cwt. sulphate of ammonia are applied.

vi. *Turnips and Swedes.*

The area under this crop has steadily diminished since the Agricultural Statistics were first published in 1866. In that year there were 42,135 acres, while in 1914 the number had fallen to 19,837. The cause of this decline is the reduction in the demand, chiefly due to the much smaller number of sheep kept, as well as to the fact that the change from sheep folded on roots to sheep ranging on grass has made considerable progress. Nor has the increase in the number of cattle seriously checked the movement, since the custom of carting off swedes to be fed in sheds is not common.

Turnips and swedes are grown with reasonable success in every part of the county. A dry time for sowing is perhaps a more frequent and trying experience than it is farther west, or in counties where there is more of a medium soil. Farmers reckon on getting a normal crop only once in two or even three years. The average yield in ten years for the county is 12·96 tons per acre, almost identical with the average (13·04) for the country, but recently it has been less. In 1911 it was 4·93 tons, in 1912 14·75, and in 1913 8·95. The direct and indirect loss involved in cultivation and in obtaining food for the stock in substitution for roots is very heavy, and seriously affects the position of men who have no great reserve of capital. The precarious nature of the crop, therefore, owing to drought and to attacks of the fly prejudices farmers against it. With the object of lessening the risk of injury from drought, experiments are being made with earlier sowings, a move also attended with danger from the late frosts and mildew. The folding of sheep on the turnips supplies dung to the rotation, the crop itself receives none except the residues from the wheat or other preceding crop which may have been dressed. This may partly account for the lower yield. The only manure given is superphosphate in quantities up to 5 cwt. per acre.

vii. *Mangolds.*

Considering their merits, mangolds are a crop which come somewhat slowly if steadily into favour with Oxfordshire farmers. There was an area of 3,497 acres devoted to these roots in 1866, and in 1914 this had only increased to 6,353 acres. This slow progress is remarkable in view of the appreciation expressed by men who grow the largest extent. The chief virtue of mangolds is that from the end of April till August or September, when other roots have lost their value as feeding-stuffs, they provide a wholesome, attractive, and nutritive food for every class of stock. No matter how fine the growth of sainfoin, clover or vetches on which sheep may be folded, they eat all the mangolds scattered among these crops. This quality of keeping gives them a unique value for the purpose of carrying stock over the season when other foods of the same kind are scarce.

As a crop, mangolds have other advantages over turnips and swedes. They give a greater and more reliable return. The average yield for the ten years 1904–13 in Oxfordshire was 19·99 tons per acre, compared with 19·51 tons for England, or seven tons more than turnips and swedes. In the three years 1911–13 the yields were respectively 15·51, 20·23, and 14·51 tons per acre. The first and last of these years were unfavourable for roots, as may be seen from the figures for turnips and swedes. The objection to mangolds is that they require more cultivation, more manure, and more labour in connexion with hoeing, lifting, and storing. They are less hardy than the other roots and must be pulled before frost comes, and they cannot be fed with safety until they have been stored and matured for a month or two. Perhaps this apparent disadvantage prevents Oxfordshire farmers from adopting them to any large extent. They have not been accustomed to put their root crops in clamps and feed them to the stock by hand, and since this practice involves more labour in the first instance than folding, they may be reluctant to introduce it. But they might with profit go into the question of whether the additional yield of seven tons per acre and the greater feeding value of mangolds compared with turnips do not justify an expenditure considerably greater. It is impossible to make any accurate calculations, but some estimate could be formed as to how far the enormous reduction in the number of sheep consequent on the drought of 1911 and following years might have been rendered unnecessary if an extended area had been under mangolds. This quality of reliability, of comparatively steady yield, is one which should make the crop more and more desirable as part of a farming system. In view of increasing demand regularity in supply is a thing to be aimed at by farmers, and there is no doubt that mangolds, with their deeper rooting habits and their immunity from attacks by fly and from club root, are less at the mercy of the climate and uncontrolled forces generally. Dung is the basis of the manures for this crop, with the addition of salt up to 3 cwt. and of nitrate of soda up to 1½ cwt. per acre. The most common variety grown is the Yellow Globe, the Tankard and Long Red being unsuited to most of the soils of the county and comparatively rare.

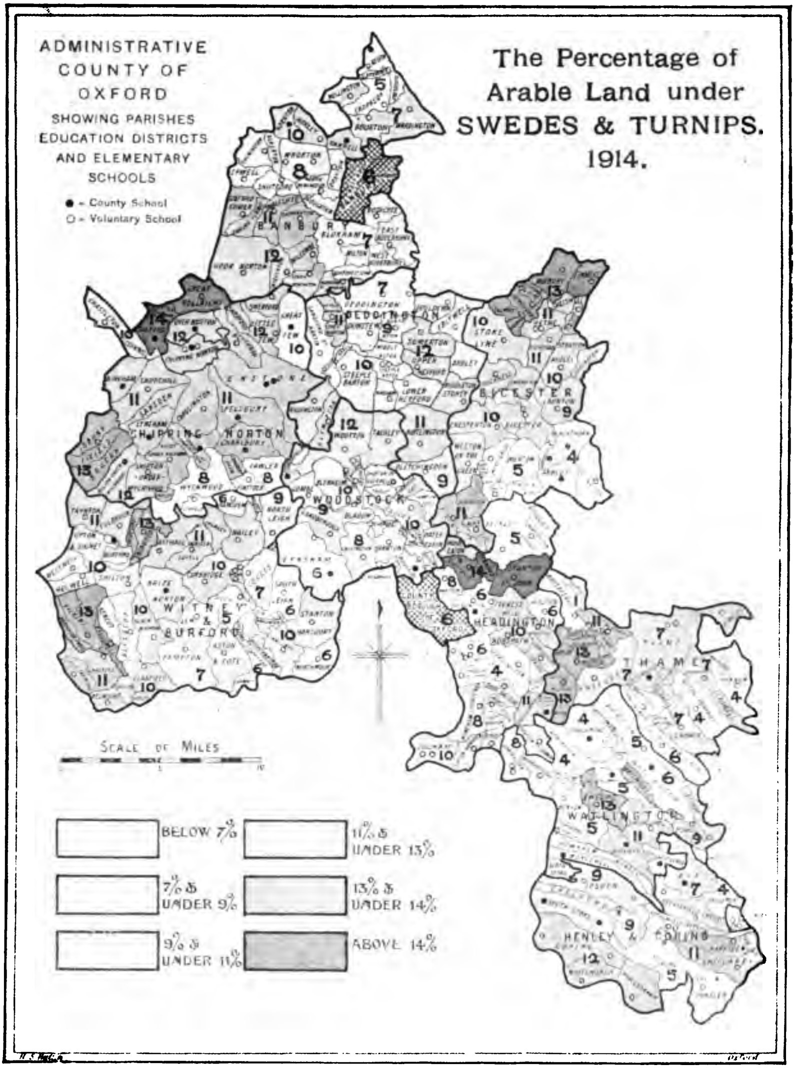
viii. *Clovers and Artificial Grasses under Rotation.*

In the seven-course rotation which is followed in North-west Oxfordshire, pure clover may occur once, but this is the shortest interval between the crops which is considered necessary to secure immunity from clover sickness. In the four- and five-course rotations red clover only occupies part of the area under seeds, the remainder being taken up by cow-grass, white clover, or other seeds, so that it still comes only once in eight years, or on heavier soils it may share a break with beans. But on the arable land generally clover rather than grasses constitutes the chief portion of the hay crop. Rye-grass is not so often mixed with it as in many other parts of England.

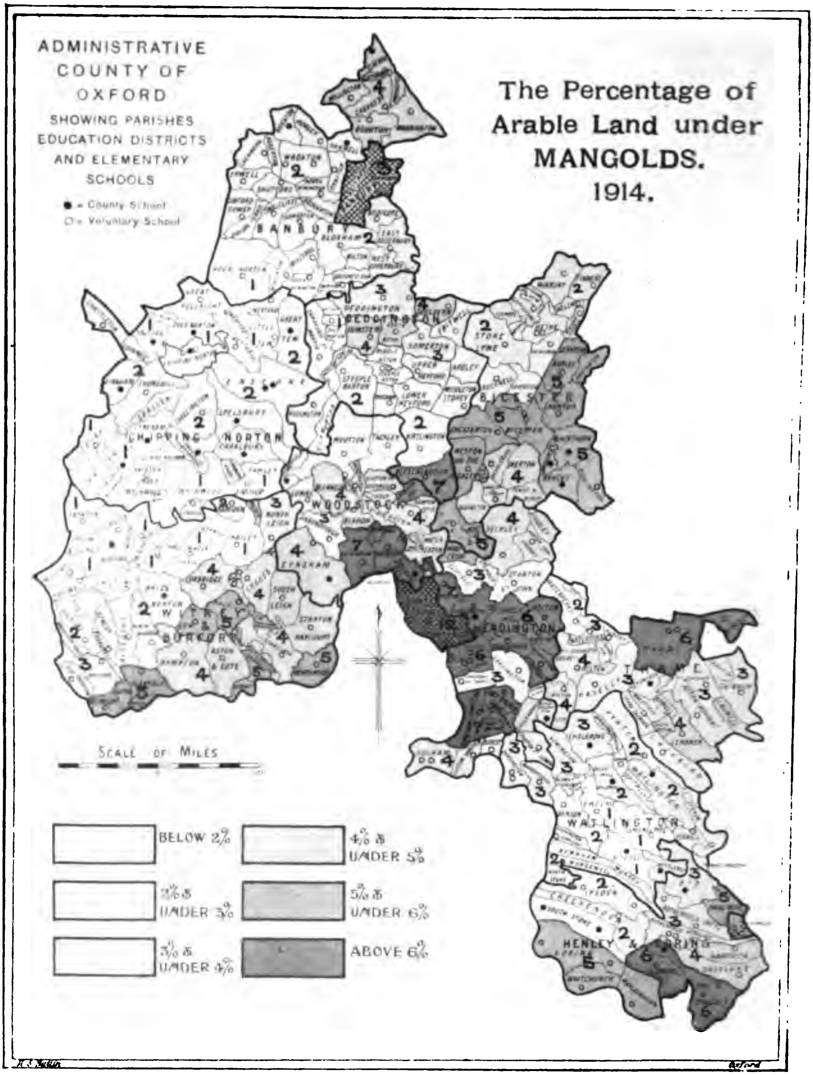
Clover is grown largely and successfully in every part of the county. Some of the heaviest and cleanest crops are found between the Chilterns and Oxford. From Crowmarsh along the foot of the hills to Chinnor and South Weston, and up the Thames valley to Culham, Little Baldon, and the Haseleys, there were splendid yields on the borders of the chalk and greensand and on the gravelly loam. East of the Cherwell, again, on the Oxford clay, or on the alluvium which rests on the top of it, heavy crops are grown for seed. It is always the second cut that is used for this purpose. Farther north and on the stonebrash all to the west of the Cherwell, clover and sainfoin occupy a large area.

Sainfoin is confined chiefly to the chalk and stonebrash soils, to the Chilterns, and to the western and northern parts of the county. Its partiality for lime, for the stonebrash as compared with gravel or black soil, is seen on farms in the Upper Thames valley. At Black Bourton, for instance, a farmer in carrying through his rotation on both kinds of soil occasionally gets sainfoin on gravel. The difference in the appearance of the crop on the two soils is so great as to create the impression for a moment that there are two crops of different kinds, all other circumstances being the same. The suitability of this district for sainfoin was noted by Arthur Young in 1807, since he states that one-seventh of the area round Burford was under it. This proportion does not hold to-day with regard to sainfoin, but taking all kinds of clover, the country between Witney and Gloucestershire boundary has retained its old character, and there are a few farmers who keep to the system of barley, sainfoin, and sheep with everything else subsidiary. There is also the custom of adhering to one strain of seed for red clover and sainfoin, statements being made to the effect that one kind has been handed down in families for several generations, the seed grown in the Cotswolds having a reputation for endurance and soundness.

The average yield of clover hay in Oxfordshire for the ten



The Percentage of Arable Land under SWEDES & TURNIPS. 1914.



The Percentage of Arable Land under MANGOLDS. 1914.

years 1904–13 was 26·33 cwt. as compared with 29·09 for England and Wales. Manures are not often applied to the crop, but occasionally it is given a dressing of kainit or slag in the autumn.

ix. *Vetches, Lucerne, and Cabbage.*

There are several subsidiary crops, the cultivation of which does not extend. The reduction in the area devoted to them may be due partly to the general decline in arable farming and partly to the diminution of a special demand for them. Unless rotations are altered, each course must share in some proportion the curtailment which has taken place in the whole. Since the practice of folding sheep has become less common, there is less demand for all the catch crops which supplied them with food, and this decrease is only slightly modified, if at all, by the custom of cutting such crops and carting them to feed cows in the sheds. Hitherto the same effort has not been made to maintain the supply of milk by means of home-grown foods that has been made to keep up the supply of mutton. There is reason for thinking that it would be profitable if farmers were able to get more milk in this way during the months when the price is high.

Vetches are still generally used for sheep. They are sown both in autumn and in spring, and constitute the green food for the flocks in many parts from June until September. In most places pure vetches are sown, but at Adderbury, where the Oxford Downs have every attention, peas and rape are mixed with them, the object being to provide a more succulent food. The farmer says experience has proved this to be an advantage. Oats are seldom or never mixed with vetches, as they are in other parts of the country.

Lucerne is in a different category from vetches, being more frequently cut for hay. Although owing to its capacity for resisting drought it grows well on the light soils, and keeps sound for a number of years, it does not commend itself to the farmers to anything like the extent that sainfoin and clover do.

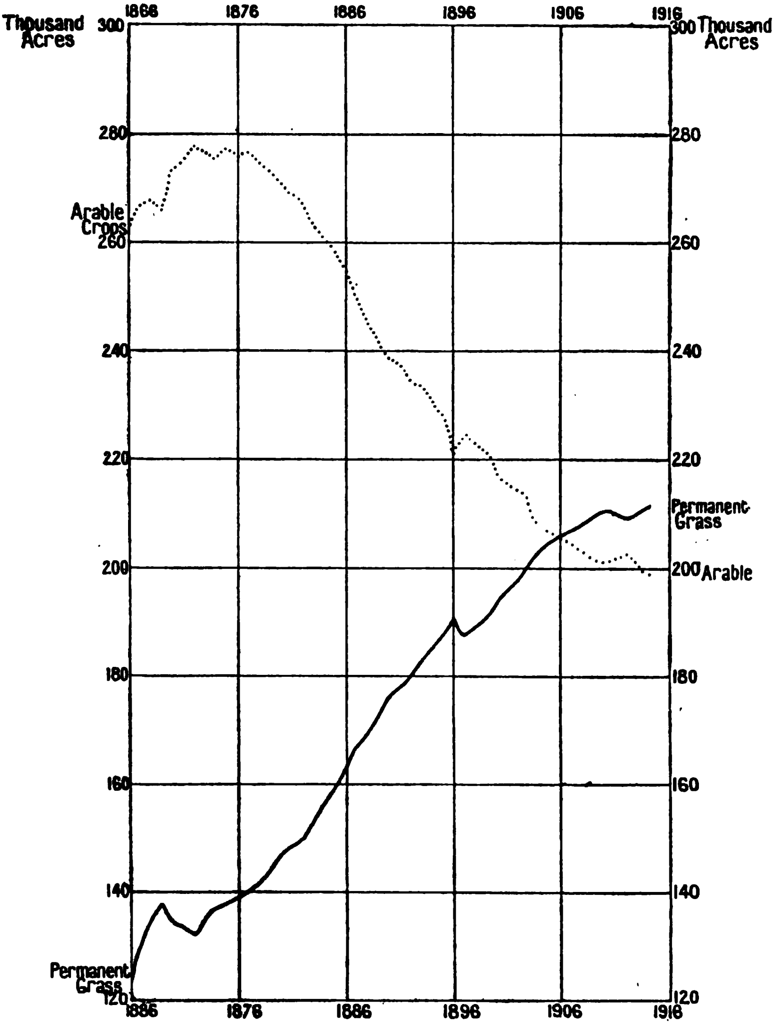
Cabbage is grown successfully in the county, when it is planted early enough. If the area under kale, however, had been the subject of a separate return, it would probably have shown an increase, since the practice of alternating several rows of kale with several of swedes has become more common, the purpose being to modify the consequence of a failure of the latter crop, since there are chances that kale which resists drought better will flourish when swedes fail.

x. *Permanent Grass.*

If this may be called a crop, it is the most important of any, because it occupies an area greater than that occupied by all the arable crops together. This area has steadily increased to the regret of many people, although the increase has not been more rapid in Oxfordshire than in neighbouring counties where conditions are similar. In 1872 there were 132,204 acres under grass, and in 1914 this had grown to 211,638 acres. The change has been gradual and almost imperceptible, as it is generally one field on a farm that is transferred from one purpose to the other rather than larger areas. The objections to the change have been justified by the fact that very frequently in the past it has meant the substitution of the most inactive style of farming for one which is comparatively energetic, and in some cases there has been a reversion to a system which has been absurdly primitive and slow.

There are several methods of managing grass land. There is (1) the arrangement by which meadows are made to grow hay for one part of the year and to provide grazing for the other, or to serve one of these purposes in alternate years, while they receive nothing in return; (2) the Port Meadow (common land) system under which they are required to graze different kinds of live stock in the largest possible numbers without receiving anything but what may come to them from floods and from the atmosphere; (3) the same system with smaller numbers of stock per acre; (4) the first system with the difference that artificial or farm-yard manure is applied; (5) the Port Meadow system with the addition that manure is applied; (6) the system under which the

DIAGRAM SHOWING CHANGES IN AREAS UNDER PERMANENT GRASS & ARABLE CROPS 1866-1914



1896. Decrease in County Area by revision of boundaries grazing stock are fed with cake; and (7) a combination of the last two.

There is reason for believing that the greater part of the grass land in Oxfordshire is treated according to the first three systems, and consequently that there is wide scope for improvement both by manuring and by cultivating with harrows of greater weight than those generally used. There are also grounds for believing that expenditure on improvement would be amply justified. Indeed, experiments carried out on a large scale prove this. By way of demonstrating the advantages derived from the application of phosphatic manures to grass land Professor Somerville has done some interesting work at the School of Rural Economy, Oxford, and has described the results in an article.[1] The argument of the article, or, in other words, the conclusion drawn from the experiments, is that by the use of these manures the growth of leguminous plants can be developed and maintained, that they in turn display activities in extracting nitrogen from the atmosphere and in transmitting it to the soil, and through it to the grasses which form the pasture, nitrogen being a constituent of their food which is too often absent, or only present in insufficient quantity. Further, the development of a thick crop of grass is beneficial owing to the accumulation of humus and the consequent improvement in the mechanical or physical condition of the soil which retains more moisture and permits aeration with proper cultivation by harrowing. Professor Somerville states the view thus: 'It has long been known', he says, 'that leguminous plants have the power of fixing free atmospheric nitrogen, and the most obvious and striking result that follows the use of a phosphatic manure on grass land is the great increase in clovers, trefoils, vetches, and other leguminous plants. These subsequently react on the grasses and encourage their growth, so that in a few years there is a marked accumulation of humus, as is evident from the thicker and closer sward or "sole".' The experiments were

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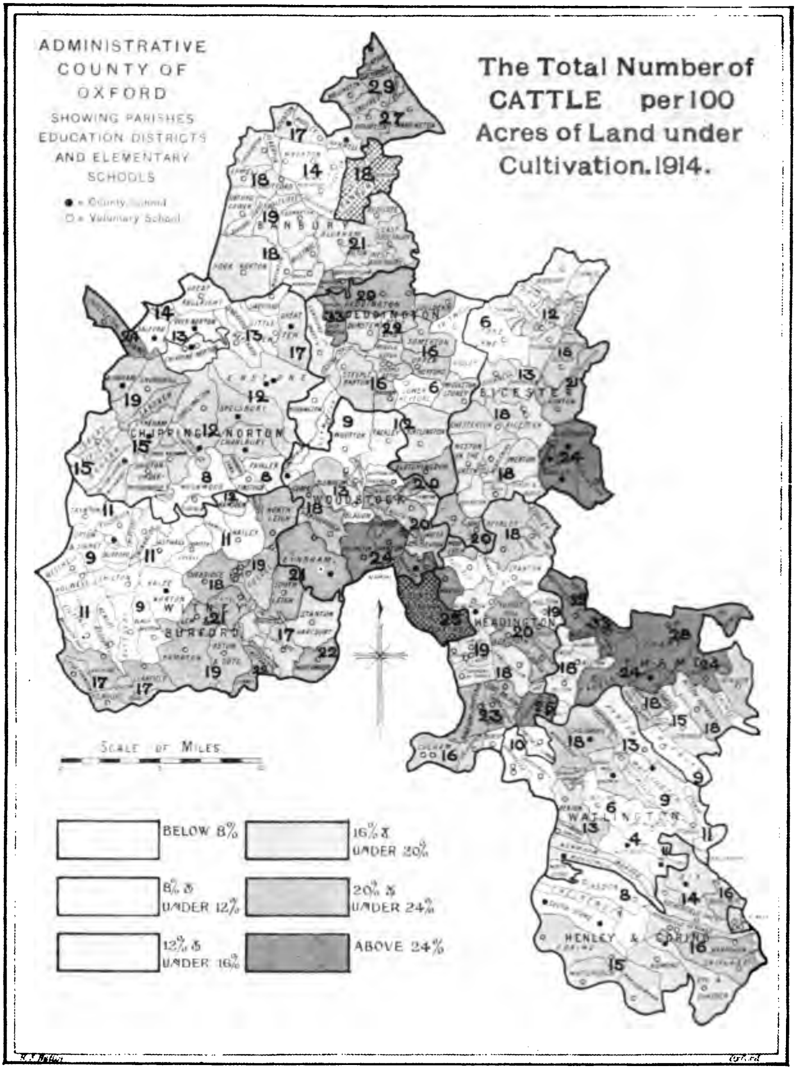
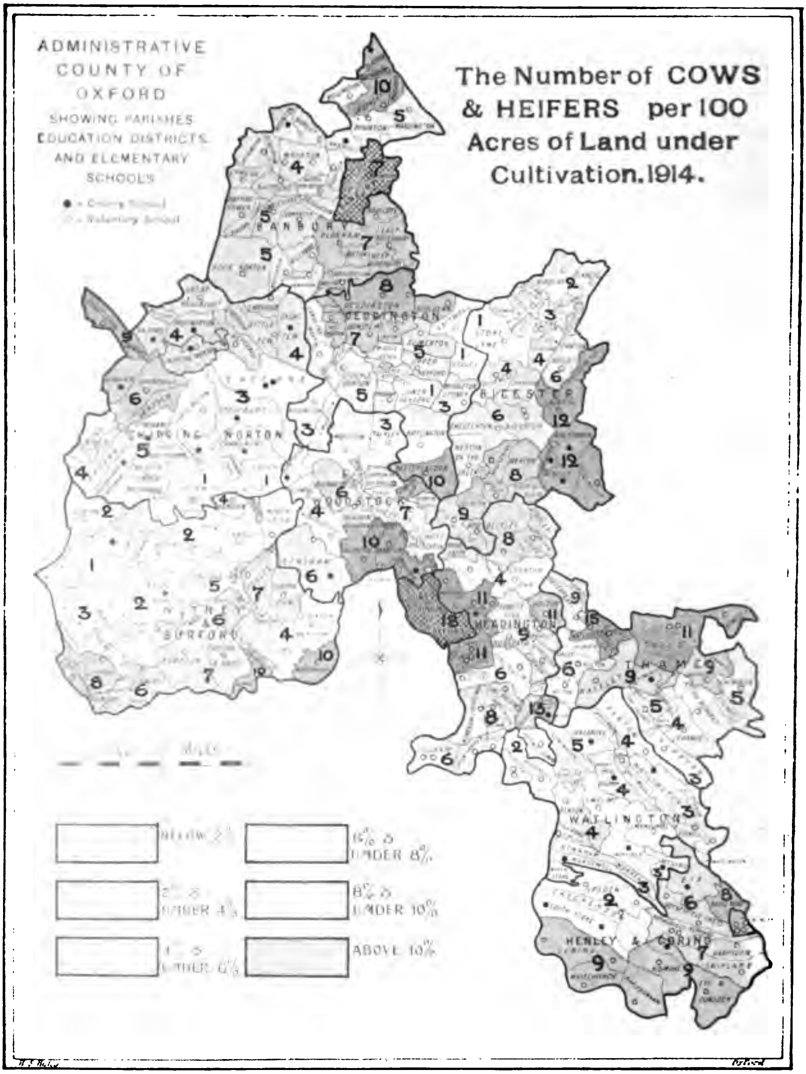
[1] 'Accumulated Fertility in Grass Land in Consequence of Phosphatic Manures,' *The Journal of the Board of Agriculture*, September, 1914.



The Total Number of CATTLE per 100 Acres of Land under Cultivation. 1914.



The Number of COWS & HEIFERS per 100 Acres of Land under Cultivation. 1914.

conducted with different kinds of soil which had been treated with basic slag, and which were brought from Cockle Park, Northumberland, Denton Hill, Sussex, and from Stoke Talmage and Lees Rest in Oxfordshire. In each case the improvement was very marked. The results here are the same as those attained on several Oxfordshire farms. Enough has been done, therefore, to make the object and the method of achieving it perfectly definite and clear. The essential thing is to initiate a form of activity which perpetuates itself through other forms and maintains production at a high standard.

Mention should be made of experiments carried out by Mr. G. R. Bland, agricultural organizer under the Oxfordshire County Council, in co-operation with the Department of Agriculture in University College, Reading.[1] The experiments took place during the years 1909–12 in seven separate districts of the county. Eleven plots were taken in each centre and, except in one case where no manure was used, a different manure, or a different mixture of manures, was applied to each plot. Centre No. 1 was at Arncot, Bicester, on the Oxford clay. The results here showed a substantial profit from the use of every manure except kainit and nitrate of soda. Centre No. 2 was at North Newington, Banbury, on the red loam with clay subsoil, a soil which is considered among the best in the county. In this case, basic slag and basic super and mixtures with these proved decidedly unprofitable, while nitrate, and nitrate and kainit together showed the only profits. Centre No. 3 was at Stoke Talmage, Tetsworth, the soil being heavy loam on the Gault clay. Here superphosphate and basic slag gave the best results, the increased yield per acre under them being very substantial. Centre No. 4 was at Bletchington on a wet clay loam. Applied separately basic slag, basic super, and kainit were unsatisfactory, while the mixture of nitrate, slag and kainit left a good profit. Centre No. 5 was at Milton-under-Wychwood on a clay loam soil, and all the manures except unmixed nitrate were profitable. Centre No. 6 was at Culham on sandy loam with a coarse sandy subsoil. Kainit and nitrate, unmixed and combined, gave the best results. The last centre was at Clifton Hampden on sandy loam with clay and gravel subsoil, and in this case every unmixed manure and every combination showed a loss.

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[1] A report entitled *Manuring of Grass Land in Oxfordshire* gives full details, and may be obtained from the County Offices, Oxford.

Instances of the extent to which improvement has taken place even in unfavourable circumstances are perhaps more common in other parts of the country, but the process is going on in Oxfordshire, and there is no reason why it should not be accelerated in all the districts where dairy farming is establishing itself. Two examples of what has been done in other counties may be given. On a farm where the soil was cold, wet clay the application of basic slag accompanied by draining increased the stock-carrying capacity so far that whereas before this was done, three acres were required to maintain one cow, subsequent to the improvement, two acres were sufficient. In the case of another farm on which a herd of sixty cows and a proportionate number of young cattle were kept, it had been the practice to take summer grazing for the latter on land outside, the rent of which was £71. On the proposal of the agent that the rent of this land should be raised the farmer decided to give it up, and to spend something equivalent in getting more grass on his holding, which extends to 460 acres, 200 of which are permanent pasture. To this he applied manures costing £50, and the remainder was spent in improving the temporary pasture in the rotation. During twelve years he has increased his herd of cows to eighty, and has added a corresponding number to the young stock necessary to replenish it, while the relative expenditure has gradually become less.

The yield of hay from permanent grass in Oxfordshire during the ten years 1904–13 was 22·30 cwt. per acre as compared with 23.54 cwt. for England and Wales.

Cultivation.

There are a few points of difference between arable farming as it was practised in Arthur Young's time and as it is practised to-day which are worthy of notice. Paring and burning as the first step in breaking up grass, and particularly sainfoin leys, appears to have been very common at the beginning of the nineteenth century. 'From all the information I received in this county', says Young, 'I am confirmed in the opinion I have entertained, that paring and burning is the best and most profitable method of breaking up all sorts of grass on all sorts of soils.' At some time between now and then the practice was discontinued, largely if not wholly, and it is probable that, if it persisted down to the depression, at the end of last century, the expense connected with it put it out of fashion. One good reason urged in its favour was that it destroyed the wireworms and other insect pests, and perhaps nothing quite adequate has been substituted for this purpose, since the ravages of the larvae are frequently apparent in the spring corns. The virtues of gas lime in this connexion seem not to be greatly appreciated.

As a matter of historical interest it may be well to set down for comparison the kinds of manures used in 1807 and in 1914. Young gives a list of the former.

1807	1914
1. Dung.	1. Dung.
2. Pigeon's dung.	2. Lime or chalk (not largely used).
3. Lime.	3. Nitrogenous manures (nitrate of soda and sulphate of ammonia).
4. Ashes.	4. Phosphatic manures (basic slag, superphosphate).
5. Rags.	5. Potash-kainit, sulphate of potash.
6. Mud.	6. Green manure.
7. Gypsum.	
8. Composts.	

Arthur Young emphasizes the wisdom of applying dung in a long or fresh state rather than short or rotted. There is reason for believing that he was right so far as certain crops are concerned, since experiments made with potatoes show a considerable margin in favour of the first system. His sarcastic outburst against the farmers of that time may be quoted with advantage, since the majority at present follow some form of the custom which he condemned. 'I beseech you, gentlemen,' he says, 'to go on carting, turning, mixing, *mining* and rotting; give your manure to the sun and to the winds; continue to spend no trifling sums in the reduction of four to one, in order, by studied operations, to render your one less valuable than the fourth of the original four. It is a wise conduct, therefore stick close to it, and argue strenuously for it over the next bottle you drink. *Mine* away; see that the heap lies light; keep the carts off; take care that the air pervades it, and let the sun shine and the winds blow—who's afraid?' If the form in which Young gave his advice is a little unhappy or severe, its substance is perhaps justified. But here it is much easier to criticize and condemn than to suggest positive or practical methods of utilizing the dung at such times and in such ways as to conserve its beneficial constituents. It is not an easy problem to solve. The loss of ammonia, of humus, which takes place between the time when dung is in its most useful state, and the time when it is put to work, is enormous, and with even a partial solution of the difficulty in practice, a vast improvement in the chemical and mechanical conditions of the soils in Oxfordshire could be effected. It is a subject on which education is required, and on which both administration and management should do much more. The present methods of dealing with it are those which would obviously appeal to men working in half primitive conditions, but these methods have been too long discarded in other departments to make their practice here tolerable. The problem of getting milk, eggs, beef, and mutton at seasons of the year when they are most valuable has been largely solved. In early times all the cows calved between February and May, and most of them went dry about October. Hens laid their eggs from February to September, and very few of them from September to February. This arrangement has been modified by the introduction of so-called artificial foods, and the change has been profitable. Some corresponding 'artificial' treatment of farm-yard manures could be devised which would make it much more valuable.

If these things are possible in the way of improving the feeding of crops, something is desirable with regard to keeping them clean. It may be granted that the soils in the county are not what would generally be regarded as the most suitable for high farming. They run quickly from those that are heavy to those that are rather light or shallow, leaving a small proportion of medium kinds. But when allowance is made for this, there still remains the fact that the land is often unnecessarily foul as well as deficient in supplied fertility. Charlock, poppies, and sorrel on the lighter soils, and couch on all kinds, are too abundant, and in many cases this state of affairs is chronic, the weeds being permitted to maintain the upper hand, giving the impression that in this matter the farmers are satisfied with a standard of achievement that is not creditable. In some quarters the suggestion was made that certain weeds should be notifiable, like animal diseases, and so many farmers are indifferent to the state of their crops that such a step seems to be necessary, if a remedy is to be found.

In different parts of the county certain areas of land have got out of hand and gone down to bushes and scrub. There are some between Bampton and Witney, some to the south of Bladon and Begbroke, and again to the north of Islip, and between Garsington and Horspath. These patches are on the clay, but there are others on lighter soils.

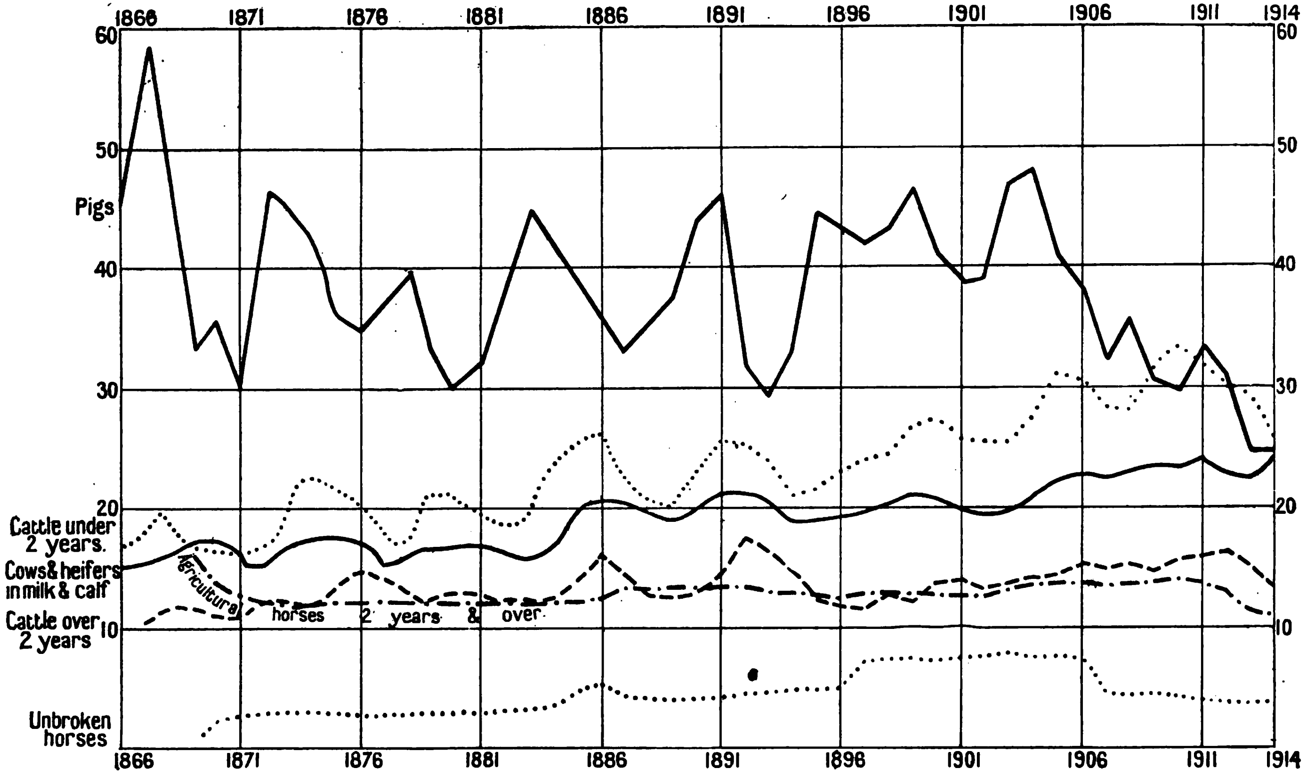
CHAPTER XII

LIVE STOCK

i. *Cattle.*

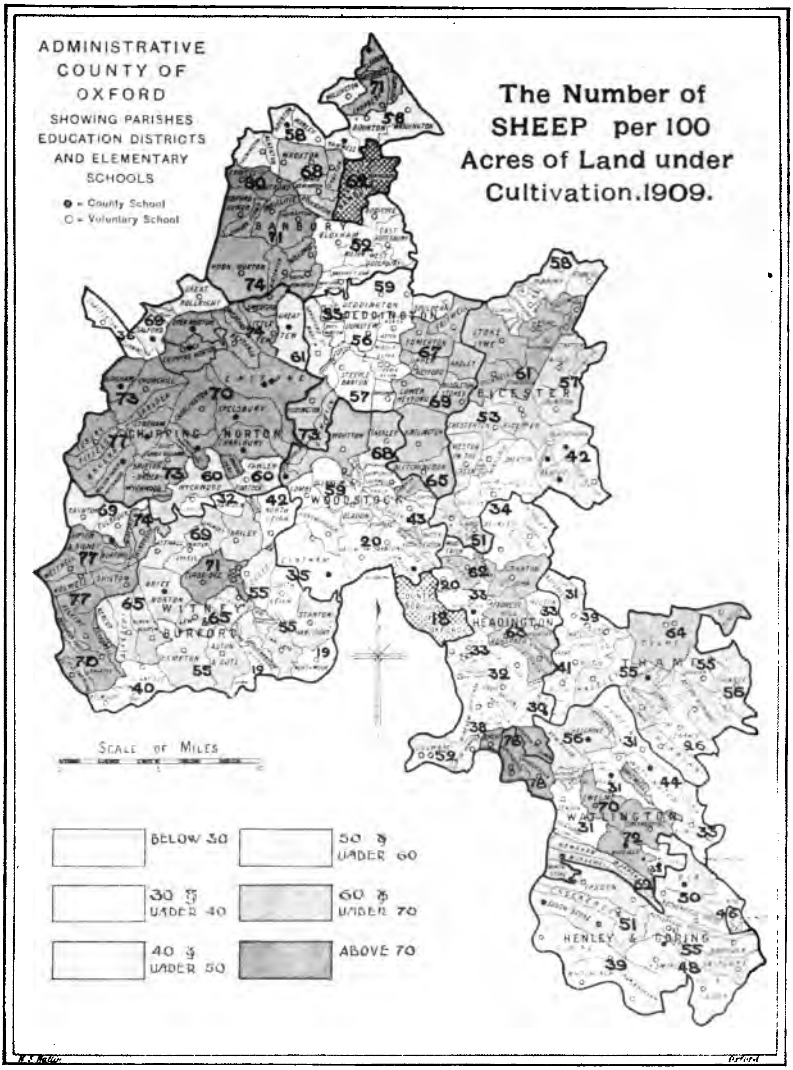
CATTLE in Oxfordshire are chiefly Shorthorns, and of these the majority are Dairy Shorthorns. For milk purposes Holstein Friesian have been kept on a few farms, at Blenheim among other places. Jerseys and Guernseys are also found in some places, but they count for little in the total. There is one herd of Longhorns at Rousham, and a herd of the old English wild white cattle at Wilcote. Records of the milk yield of these cows have been kept, and they average over 700 gallons. Most of the fat stock is the offspring of Shorthorn cows, no matter from what breed the bulls may come. There has been a great change in this respect during the last century. Arthur Young makes the statement in his report that 'the intelligence relative to cattle in Oxfordshire is not locally interesting. The county has no breed of its own, nor is any particular race so predominant as to afford much information that is particularly valuable; much the greater part of the county is arable, and in the very narrow districts where grass prevails there is not much to excite the attention of the traveller.' His account of things, however, is more interesting than he believed. He describes the competition between Longhorns and Shorthorns for supremacy. No numbers of the two breeds are given, but in the cases which he mentions it appears that they were somewhat equally divided. In 1807 the superior milking and feeding qualities of the Shorthorns were appreciated, although there was a prejudice against them on the ground that they were less hardy than the Longhorns, while they are seldom or never mentioned as being suitable for teams.

DIAGRAM SHOWING CHANGES IN LIVE STOCK 1866-1914.

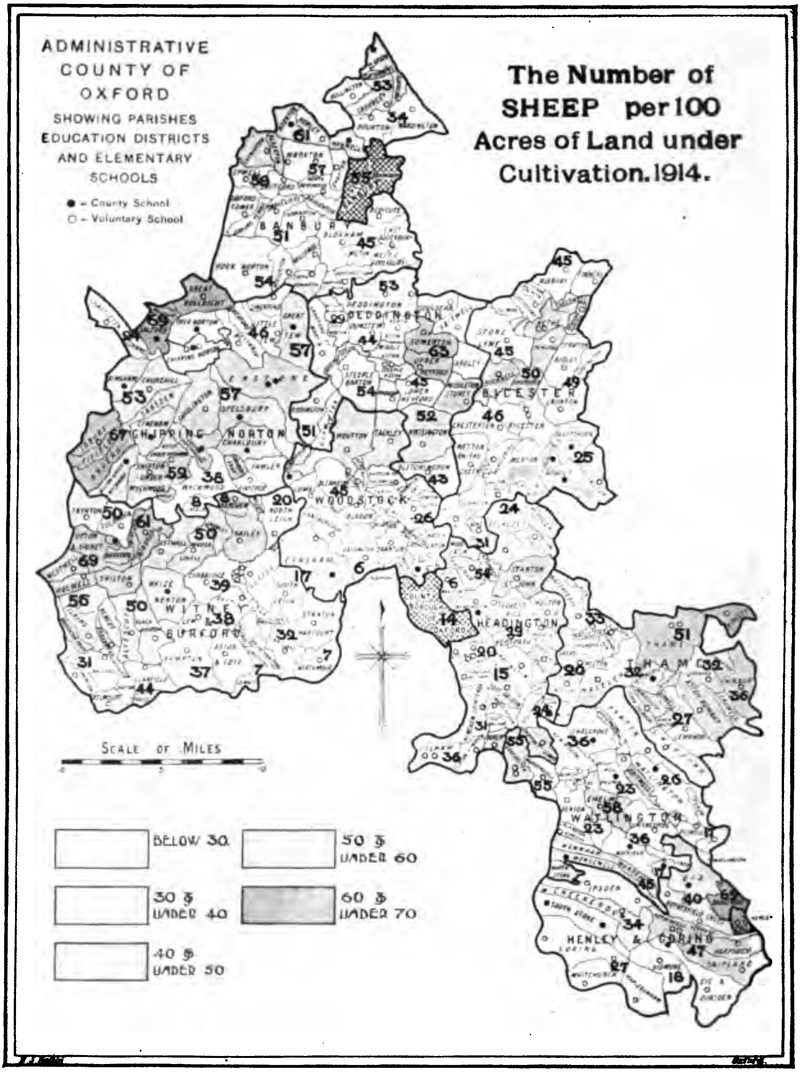


Since the demand for cattle as draught animals has ceased, and since they are now only sought to supply beef and milk, the Shorthorns have clearly proved themselves the best for these two purposes. The experience in Oxfordshire is common in most parts of England. In spite of experiments with breeds which may be superior as producers of milk alone, or of beef alone, by far the greater number of farmers rely on the breed which enables them to benefit by supplying the demand for both beef and milk. This seems to be a perfectly sound arrangement. The possession and management of a herd of Shorthorns make it possible to run a business on a broad and varied basis, and it is perhaps worth while remarking that no farm was seen where the business fully represented all the possibilities. Thus, while a herd of Shorthorns might be used for the production of milk, for the rearing of heifers, of bulls and of bullocks which might be fattened, the general practice is for farmers not to undertake all these activities. If they produce milk, they do not rear heifers to replenish their herd, or they do not feed off bullocks.

It is difficult to say which system of managing herds is the most common. There are farmers who never rear any heifers, and there are others who maintain their herds almost entirely with animals of their own rearing. In most parts of the county there is perhaps enough interest in breeding to make farmers ambitious to get calves from a good milking strain of their own. The majority keep their own heifer calves, selling occasionally when prices are attractive and buying when they see animals which appear suitable for their purpose. There are a considerable number who display little or no interest in breeding, adopting methods similar to those of cowkeepers, buying all their cows immediately before or after calving, and selling them at the end of their milking period. This makes the business largely commercial, since, with large herds especially, there must be constant buying and selling. A system which has been attended with success is followed on a farm in South Oxfordshire. All the heifers and



The Number of SHEEP per 100 Acres of Land under Cultivation. 1909.



The Number of SHEEP per 100 Acres of Land under Cultivation. 1914.

cows are purchased. Hereford, Aberdeen-Angus, or Devon bulls are used, and all the offspring are reared and fattened. A great deal of importance is attached to the bulls with a view to securing the best type of feeding animal, and the result of careful selection is seen in the heifers and bullocks from the home herd compared with those which are bought in to make up the number of the stock being fattened. The farmer is convinced that it pays to give high prices for the bulls. At present he regards the cross between the Hereford and Shorthorn as the most satisfactory. Under this system it is possible to get the largest direct footing in the markets for beef and milk, but there is a widespread opinion that it is causing serious injury to the dairy stock of the country.

Co-operation of an unorganized kind is not unusual. In a few districts where Johne's disease has attacked herds, farmers do not rear their own calves, and they prefer to buy cows at their second or third calving, that is no younger than four or five years. This gives an opportunity to breeders in healthier districts, and the co-operation has been successful. The same principle operates more widely in cases where the only kind of cattle kept are bullocks for fattening. It is a simple and inactive style of farming which prevails in some of the grass districts. Farmers buy calves after they are weaned, or store cattle up to two and a half years old. They plough little, wintering their stock on meadow hay, and finishing them for the market with cake on the grass.

In connexion with cows one satisfactory feature is the increasing number of herds in which a high standard of breeding has been attained. The cows are non-pedigree, but there has been a great improvement within recent years. Such herds are generally not large, but they are well distributed over the county, and they supply farmers in their neighbourhood with bulls above the average quality. The keeping of milk records has given a new interest to this work of improvement. The scheme of the Board of Agriculture, initiated in 1914, has met with encouraging support. The appreciation of the possibilities contained in this system of testing the merits of their cows is sufficiently far advanced in the case of several men to make it clear that they will be more exacting in their demands for animals bred from a proved milking strain.

Besides those herds of good, non-pedigree Shorthorns there are several pedigree herds in the county. Reference has been made to those at Kelmscott and Albury. Bulls from them are met here and there in different parts, and thus a process of disseminating their qualities downwards through the better stocks goes on, or, regarded from the other end, it is a process of levelling up the qualities of the breed. This movement is considered unduly slow by enthusiasts, but it is unmistakable and it is on sound lines. Although Oxfordshire has no breed of its own, it is playing a part in the development of the Shorthorn breed which compares favourably with that played by other counties.

There are features of management which call for improvement. The custom of providing no proper cow-sheds in certain districts, of allowing cows to lie out night and day in winter, seems to be inconsistent with the highest development of the milk business. The wide extent of the practice, and the assurance that it is sound on the part of those responsible for it, make criticism cautious. But after everything has been said in favour of the primitive system, there are overwhelming reasons for condemning it. The health of the cows may not have been secured by housing them in close, unventilated sheds, but there is a vast interval between the extreme policy of allowing them to live in wet fields, and to be milked there or in hovels surrounded by mud, and the extreme policy of impairing their constitutions by shutting them up in stuffy sheds. Some medium policy is possible. Apart from the comfort of the animals there is the question of facilities for handling the milk and for securing cleanliness. This important aspect of dairy management is the least satisfactory, and in this respect the agriculturists of Oxfordshire are by no means making the most of their opportunities.

There has been a comparatively steady increase in the number of cattle in the county since the Agricultural Statistics were first published in 1866. In that year there were 42,135 of all kinds, and in 1914 there were 69,053. Between 1885 and 1914 the amount of the increase for the whole of England was 8·6 %, and for Oxfordshire it was 11·5 %. There were in 1914 5·7 acres under crops and grass against each head of cattle in the whole of England, while in Oxfordshire there were 5·9 acres.

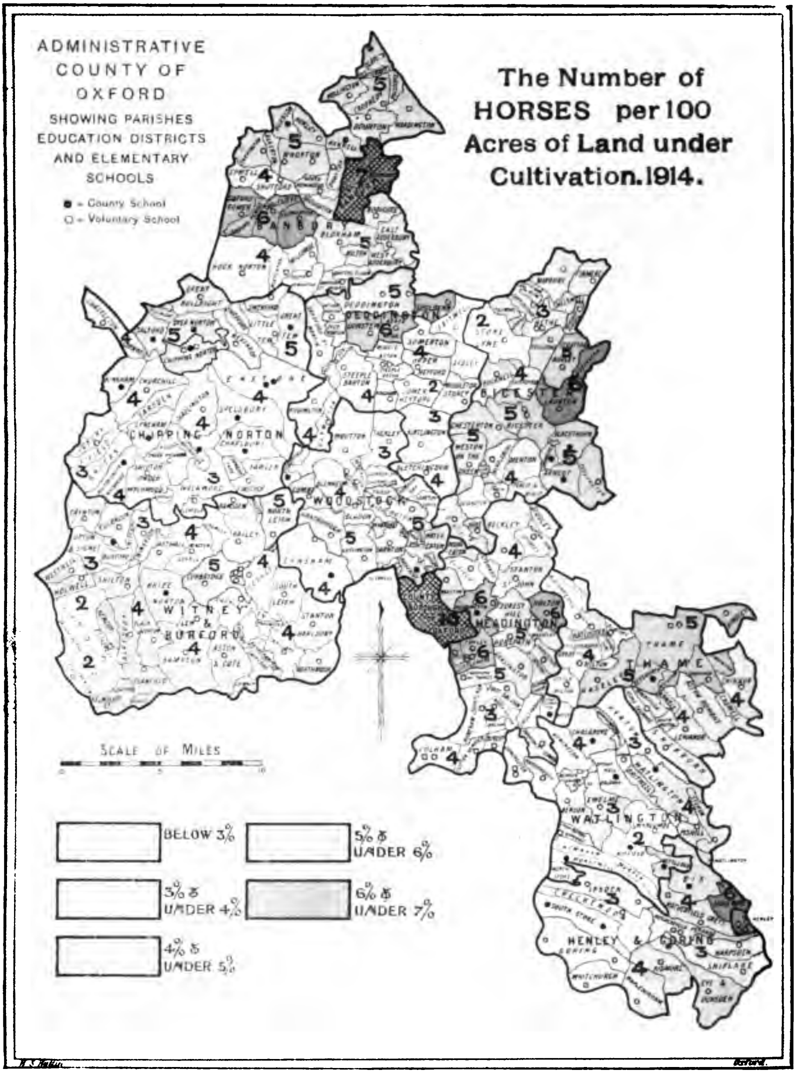
ii. *Horses.*

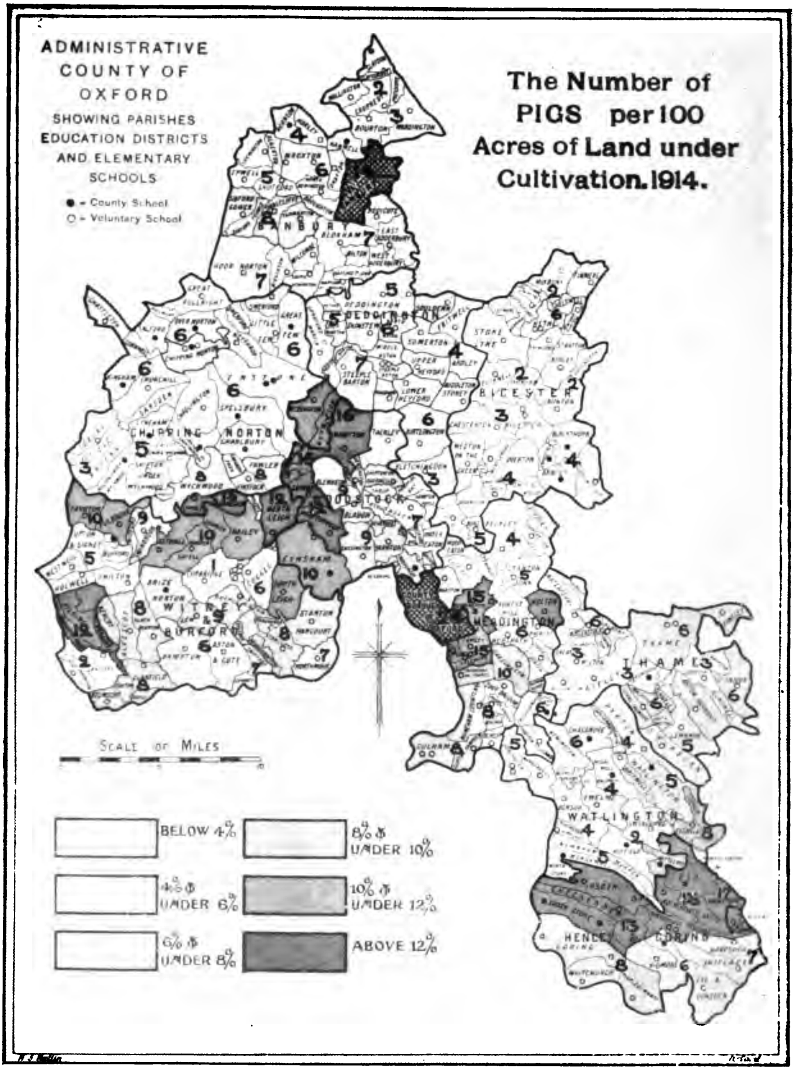
Shire horses do the work on most farms. A few Clydesdales and lighter horses of nondescript breeds are used here and there, but Oxfordshire farmers, particularly those who have farmed longest in the county, have a very decided preference for the Shire with his steadier pace in working heavy soils. There is so much of this kind of land in every district and on most farms that Shires with all their weight are needed. Another reason for preferring them is the fact that they are most suitable for the market, for the demand from the cities for horses which will pull the heaviest loads.

It is impossible for different people at different periods to judge things by the same standard, and therefore little information can be derived from previous reports on the merits of the horses then in the county. Arthur Young does not give an opinion on this point, the things which seemed to interest him almost exclusively being the custom of housing the horses in open yards and sheds, and of feeding or 'soiling' them with vetches there. Mr. Clare Sewell Read, on the other hand, pronounces a very definite judgement on the type of horse which he found in Oxfordshire in 1853. He gives the impression that the average farm-horse was of an extremely inferior kind, that farmers were satisfied if they could keep one good team for the road, however indifferent the others might be. It is still true that farmers send their best horses to and from the market, but it would be inaccurate to suggest that in this matter all the farmers' fine goods are so to speak in the shop window. Taking the working horses through and through at present a considerable proportion of them are useful and well kept. It might be safe to place this proportion between one-third and one-half of the total.

There are two main causes of inferiority. There is the failure to secure good stallions, and the failure to treat the Shires as they require to be treated. The first defect is being made good partly by the private enterprise of the owners of stallions, and partly by the formation of heavy horse societies. The result is that there are now more high-class horses travelling in the county every spring and summer. With regard to the second point the impression that the Shire is an expensive establishment to maintain, and that consequently it often falls into a dilapidated condition, is confirmed by what was seen of a good many horses in Oxfordshire. If a well-kept team of Shires is a fine thing, an ill-kept team is in proportion unsightly, and there were enough of the latter in the county to leave in the mind the picture of the Shire as a horse with ill-developed and drooping hindquarters, with the body fitting into them awkwardly, an arched back, the forepart lacking in depth and weight, and the whole mass struggling along clumsily rather than carrying itself and its load. There are too many of this kind of horse in the county, and it is produced by want of proper maintenance as well as by want of proper breeding. There may therefore be reason for the view that a lighter horse, and one less expensive to keep, would be more suitable for farmers on the lighter soils, who have not some surplus capital.

It is somewhat remarkable that, with all the steam cultivation and the reduction of the area under the plough, the number of horses has increased during the last forty years. In 1874 there were 16,231 horses in the county, and in 1914 there were 19,372. In 1874 there were 275,286 acres of arable land, and in 1914 there were only 199,048 acres. It is difficult to account for the failure of this decline in cultivation to produce a corresponding reduction in the


The Number of HORSES per 100 Acres of Land under Cultivation. 1914.
ADMINISTRATIVE COUNTY OF OXFORD SHOWING PARISHES EDUCATION DISTRICTS AND ELEMENTARY SCHOOLS
● = County School
○ = Voluntary School
SCALE OF MILES
0
5
10
BELOW 3%
3% & UNDER 4%
4% & UNDER 5%
5% & UNDER 6%
6% & UNDER 7%
BANBURY
DEDDINGTON
BICESTER
CHIPPING NORTON
WOODSTOCK
WITNEY & BURFORD
HEADINGTON
THAME
WATLINGTON
HENLEY & GORING
Oxford



The Number of PIGS per 100 Acres of Land under Cultivation. 1914.

number of horses. There may be an increased use of horse-drawn implements in connexion with some forms of cultivation and with harvesting the crops. But horses are more numerous in districts where permanent pasture occupies a greater proportion of the area than is occupied by crops, as if the breeding and grazing of horses, without respect to the work on which they are employed and for which they are intended, accounted for their presence. So far as this increase is concerned, Oxfordshire differs from England as a whole. Taking the two years 1884 and 1914 the number of horses in England in the first was 1,086,633, and in the last 979,512, showing a decline of 9%. There was an increase of slightly varying constancy in the country until 1905, and since that year there has been a decline. In Oxfordshire, on the other hand, there were 17,875 horses in 1884 and 19,372 in 1914, an increase of 8%. No circumstances peculiar to the county were mentioned as being the cause of this, but it is clear that, whether horses are reared for agricultural purposes, or to meet demands from outside, the increasing use of petrol and other forms of motive power in every department of industry has not yet made rearing less profitable.

iii. *Sheep.*

Arthur Young enumerates the breeds of sheep which he found in Oxfordshire in 1807. There were Berkshires, Wiltshires, South Downs, Ryelands, New Leicesters, Dorsets, Gloucesters, Cotswolds, and Welsh. There was one flock of Merinos and one of Warwickshires. The broad division between the districts occupied by the main breeds which exists to-day was evident at that time. From the south-eastern boundary of the county to Oxford the Berkshire, apparently a large, slow maturing sheep was generally kept for folding purposes, as the Hampshire is kept in the same district to-day. But it was being challenged and supplanted by the South Down and Leicester. 'The grand fault of the Berkshire', says Young, 'is taking so much time to make them fat.' The contest between the breeds was one between quality and early maturity on the one hand and weight on the other.

A good many farmers refused to adopt the South Downs, because they would have to give as much for them as for Berkshires which weighed about thirty pounds more. It would only be a few years after this that the problem was solved, a compromise being reached by the evolution of the Hampshire, a cross from the Berkshire, Wiltshire, and South Down, the latter being regarded as too small in relation to the producing capacity of Oxfordshire.

To the west of the Cherwell again a conflict which had not developed so fully was going on. The Cotswolds and Gloucesters had been the principal breeds here, but South Downs and Leicesters had been introduced and were placing farmers in a dilemma similar to that in which their neighbours in the south had been placed. In this case the compromise came later in the shape of the Oxford Down, a cross from the Cotswold, Hampshire, and South Down. The results of these evolutions have been approved by the experience of a century, and it is perhaps true to say that neither Hampshire nor Oxford Down has lost ground.

This statement may be subject to misinterpretation in view of the enormous decline in the number of sheep, a decline, however, which may only be temporary and not at all due to any failure in these breeds to fulfil the purpose for which they were evolved. As sheep playing an essential part in the cropping rotation, as consumers of roots and of all kinds of green crops the Oxfords and Hampshires practically hold exclusive possession. Neither South Downs nor Leicesters have maintained the position they gained a century ago. The decline in the number of permanent Down flocks is serious enough, for, apart from anything which may be learned from the *Agricultural Statistics*, farmers frequently referred to the effect which their disappearance from so many farms would have on crops. Oxfordshire has suffered a heavy reduction in its sheep stock in comparison with the country as a whole. In 1885 there were 16,809,778 sheep in England, and in 1914 there were 13,651,965, giving a decrease of 19 %. The figures for Oxfordshire in these two years were 299,172 and 171,489, showing a decrease of 43 %. In England as

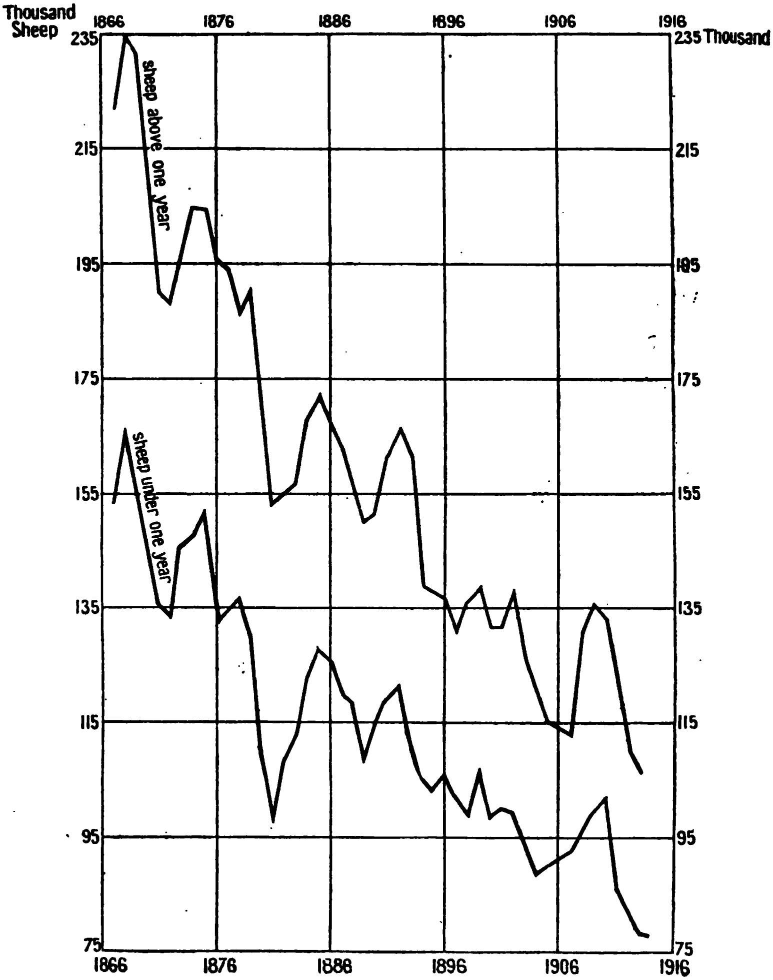


DIAGRAM SHOWING CHANGES IN No. OF SHEEP 1867-1914 a whole there is one sheep to 1·9 acres of the area under grass and crops, while in Oxfordshire there is only one sheep to 2.3 acres.

While these figures may be taken to prove that there has been a reduction in the number of folded sheep, they probably do not give a correct impression of the actual situation. It is since 1909 that 27 % of the reduction in the county has taken place, the chief cause to which it is attributed being the droughts of 1911 and subsequent years. If all the kinds of sheep that are in the county throughout the year are taken into account, the difference may not be so great as the statistics make it appear, since the alternative system of keeping sheep temporarily on grass has come into vogue, and it is probable that a large number of flying stocks, brought into Oxfordshire in autumn and sold in spring, escape the census of the Board of Agriculture, which is taken on the 4th of June. Cross lambs are bought in autumn, put on grass, fed with corn and cake, and sold as soon as they are fat. This style of working requires less capital, and exposes the farmer to less risk from drought, than the maintenance of a regular flock.

Another system of keeping flocks of ewes on the grass and of taking cross lambs from them has established itself in a few places. Border Leicesters, Kents, and Cheviots are used for this purpose. The system has probably not been tried long enough to prove whether it is sound or not, but with so much of the land going down to grass, it is hard to see how the full number of sheep can be kept unless some such adaptation is made to meet the new circumstances. There are not sufficient roots grown now to feed as many sheep as once were fed, and if the price of mutton remains as high as it has been for a few years, it will be profitable to improve the grass and keep flocks of grazing sheep. In a review of the position there are several elements to consider. It may be asked how far an increase of 11 % in the number of cattle kept may have had an influence on the number of sheep. This may really be a question of how much capital is available to maintain a full stock of all kinds, but it is possible that, in the first instance, the average farmer who increases his herd of cows makes a corresponding reduction in his flocks, although market conditions and the carrying capacity of farms might justify an absolute increase.

While there has been a great decline in numbers of ordinary sheep, it must be said that there has been no falling off in the trade with well-bred Oxford Downs. This breed which bears the county's name is increasingly sought after for crossing purposes. As one farmer said: 'It is the most cosmopolitan breed of sheep.' The important work of keeping it pure and vigorous has been performed almost wholly in the part of the county to the west of the Cherwell, and just across its boundaries in Berkshire and Gloucestershire. That is, the home of the Oxfords lies practically between Adderbury, Cheltenham, and Faringdon. In this area there are a number of enterprising farmers and landlords so devoted to the breed that they are likely to keep for the county the prominent position it has held, even if good flocks can be established in districts so distant as Norfolk and the East of Scotland.

iv. *Pigs.*

If there is one class of stock whose fortunes have been too little the subject of observation in this survey, it is pigs. For no very definite reason they were generally overlooked, or passed with slight notice. In the Chilterns there were three or four pedigree herds of Berkshires and one of Middle Whites on whose merits the farmers dwelt for a short time, and again in North-west Oxfordshire, where butter is made, and where milk is available for feeding, there were several herds, mostly Berkshire, or the local Oxfordshire breed. In other parts of the county, where arable farming is the prevailing form, or where all the milk is sent away, few pigs are kept on the farms. If an exhaustive investigation were made, it would be found that most of them are distributed in small numbers over allotments and small holdings. Pigs do not run much in the fields or in orchards, as they do in

Suffolk and other counties, the greater part of their food being carried to them in their sties.

There has been a movement to have the local breed registered as the Oxfordshire, but it has not yet succeeded. The breed is a red and black spotted, 'black and sandy', being a cross between the Berkshire and Tamworth. Perhaps it has no unique points, but again it is a useful compromise, combining the large frame of the Tamworth with the finer qualities of the Berkshire, not being so coarse as the former, and having more size and weight than the latter.

The price of pork has been so high for a time that it might justify greater attention to the rearing of pigs. The question of the co-ordination of the different classes of stock is one for the county authorities and Board of Agriculture as much as for farmers. At the moment the demands for most kinds of farm produce are competing more keenly than usual. Beef, pork, mutton, and dairy produce are all wanted, and there are many points to consider before suggestions can be made about the areas or capital to be assigned to the production of each. The fluctuations in the number of pigs kept in Oxfordshire have been rather sharp from year to year, but over a fairly long period there has been a decline in the average number.

v. *Poultry.*

Owners of poultry showed greater enthusiasm for their stock than owners of pigs, and the poultry themselves were more in evidence. This is one of the branches of farming which has displayed a wonderful measure of development within recent years. So far as could be ascertained, the policy of managing poultry as a serious part of the farm stock, as well as a serious source of revenue, originated a good many years ago on a farm in South-west Oxfordshire, and it has now become fairly general, especially in this part of the county. At present there are between 900 and 1,000 head of poultry on this farm, and relatively they receive as much attention as the Oxford Downs, although these are given a very important place. The system under which poultry are kept in such large numbers as to make it worth while handling their produce is a sort of revolution, and the practice of allowing them to range over the fields is profitable. They get one or two large fields wholly to themselves, and after harvest they are taken over the stubbles, living well and healthily on food which formerly went to waste. From the farm just mentioned the best eggs are sent to London, and the second best are sent to the towns nearer home. On the financial side the business has given satisfaction. There is room for an extension of the system in all parts of the county, particularly in those devoted to corn-growing.

AGRICULTURAL STATISTICS FOR OXFORDSHIRE

	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875
Total area	470,095	...	...	...	...	...	...	...	...	...
Total acreage under crops and grass.	385,378[1]	397,411	402,527	403,849	407,382	408,415	409,723	411,438	412,455	414,608
Wheat	57,357	59,146	64,119	63,054	61,915	63,160	65,552	65,364	65,275	61,088
Barley	53,339	52,269	49,369	51,447	53,887	53,485	51,165	52,779	53,321	56,533
Oats	21,248	22,862	23,533	24,028	23,976	23,293	22,828	22,531	22,333	23,610
Rye	274	204	142	254	182	221	385	399	233	279
Beans	16,986	17,071	16,947	18,032	16,104	16,558	16,133	18,145	17,883	19,265
Peas	7,134	8,591	8,517	11,424	8,201	10,102	9,389	8,289	8,095	8,733
Potatoes	1,036	1,162	1,329	1,535	1,629	1,887	2,128	1,663	1,704	1,442
Turnips and Swedes .	42,135	40,704	41,205	41,360	41,806	40,827	37,481	38,181	39,268	39,570
Mangold	3,497	3,411	3,216	4,271	5,092	6,856	5,612	5,272	5,037	5,624
Cabbage, Kohl-Rabi, and Rape.	1,871	1,123	753	1,734	1,289	2,403	2,341	2,006	1,526	2,533
Vetches, Lucerne, &c. .	8,340	9,704	7,251	7,222	7,079	9,127	11,553	10,844	10,837	11,398
Bare fallow	6,123	6,911	8,891	6,944	5,600	4,545	5,847	5,718	7,024	5,667
Clover and artificial grasses in rotation .	43,041	43,399	41,899	34,581	[2] 32,715	29,939	36,293	34,380	32,010	30,246
					[3] 13,406	12,046	10,579	11,075	10,618	11,138
Permanent pasture not in rotation . . .	122,734	130,772	135,009	137,684	[2] 52,012	61,063	62,606	58,383	55,125	57,762
					[3] 82,167	72,518	69,598	76,190	82,044	75,590
Horses—										
2 years and above .	...	..	...	17,479	...	...	...	...	...	...
Under 2 years . .	...	...	...	2,153	...	...	...	...	...	...
Used solely for agriculture.	...	...	...	...	13,671	12,848	12,743	12,868	12,872	13,074
Unbroken and mares solely for breeding.	...	...	...	...	3,045	3,164	3,066	3,263	3,359	3,692
Cattle	42,135	...	...	...	...	...	...	...	...	...
Cows and Heifers in milk, &c.	...	14,767	16,486	17,343	17,537	15,833	16,424	17,507	17,762	17,793
2 years and above .	...	10,614	11,685	11,416	11,868	12,076	12,652	11,966	13,791	15,384
Under 2 years . .	...	16,234	18,953	17,156	17,362	16,519	17,529	20,834	22,556	21,743
Died of plague up to April 21, 1866.	2,566	...	...	...	...	...	...	...	...	...
Sheep	333,304	...	...	...	...	...	...	...	...	...
1 year and above .	...	221,890	235,661	232,198	213,055	189,931	188,288	195,608	204,814	204,607
Under 1 year . .	...	152,919	166,598	157,915	144,994	135,334	132,738	145,972	147,559	151,739
Pigs	42,372	58,141	45,069	33,101	35,013	28,684	46,658	45,579	43,555	36,512

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[1] No attempt should be made to reconcile the figures of the total acreage with the sum of the various items, as certain minor crops included in the official agricultural statistics have been omitted from this list.

[2] For hay.

[3] Not for hay.

	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885
Total area	470,095	...	...	...	...	...	...	...	...	...
Total acreage under crops and grass.	414,663	416,723	416,378	417,777	418,311	417,606	417,677	417,509	417,733	417,822
Wheat	54,962	60,847	61,215	54,419	55,065	55,193	59,417	51,796	53,583	48,074
Barley	55,546	52,208	54,039	58,860	54,301	51,856	47,808	47,611	45,775	48,859
Oats	26,501	26,304	25,106	24,212	28,151	31,091	28,096	31,771	29,340	30,598
Rye	267	328	373	551	532	434	555	364	293	324
Beans	17,675	17,694	14,543	15,133	14,011	13,601	14,018	14,389	14,085	14,191
Peas	7,798	8,915	7,777	7,343	6,344	6,526	7,892	6,506	5,970	5,303
Potatoes	1,521	1,558	1,471	1,549	1,534	1,815	1,704	1,590	1,744	1,845
Turnips and Swedes	39,127	37,124	36,454	36,904	36,392	34,191	34,424	34,618	35,398	34,633
Mangold	4,921	5,243	4,720	5,208	4,529	4,666	4,487	4,950	4,401	4,893
Cabbage, Kohl-Rabi, and Rape.	2,308	2,003	2,046	1,704	1,766	1,613	1,396	1,301	1,333	1,322
Vetches, Lucerne, &c.	9,919	11,087	10,644	12,034	9,789	10,686	10,431	9,896	10,675	10,762
Bare fallow	9,070	7,971	8,655	10,618	12,478	11,602	12,928	11,251	11,139	8,610
Clover and artificial grasses in rotation	[1] 34,530 [2] 11,541	32,481 12,538	47,312	44,699	46,297	45,341	44,564	47,472	47,066	49,735
Permanent pasture not in rotation	[1] 56,530 [2] 82,297	59,656 80,673	141,878	144,301	146,929	148,799	149,850	153,898	158,836	158,593
Horses—										
Used solely for agriculture.	13,282	13,305	13,326	13,786	13,502	13,624	13,736	13,716	13,850	13,955
Unbroken and mares	3,680	3,626	3,752	3,734	3,774	3,780	3,663	3,738	4,025	4,238
Cattle—										
Cows and Heifers in milk, &c.	17,015	16,439	16,780	17,197	17,286	17,217	17,353	16,914	17,892	20,185
2 years old and above	15,046	13,375	13,049	13,353	13,759	13,777	13,014	12,511	13,038	14,442
Under 2 years	19,663	17,549	18,135	20,722	20,159	19,481	19,574	20,784	23,676	25,497
Sheep—										
1 year and above	195,372	193,623	186,192	189,716	169,913	152,946	155,560	157,243	167,938	171,331
Under 1 year	133,285	134,677	137,037	130,172	109,246	98,380	107,856	113,045	122,178	127,841
Pigs	34,870	37,760	39,522	33,348	31,559	32,336	39,330	44,682	41,652	38,536

[1] For hay.

[2] Not for hay.

AGRICULTURAL STATISTICS FOR OXFORDSHIRE (*continued*).

	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895
Total area	470,095	...	...	...	...	...	483,617	...	...	...
Total acreage under crops and grass.	417,742	417,319	414,404	414,261	414,966	415,286	414,149	416,521	416,248	415,616
Wheat	44,244	42,265	51,519	48,166	45,923	44,732	42,880	35,840	37,448	23,188
Barley	48,833	48,080	44,847	46,368	45,806	45,859	44,247	46,511	46,293	48,460
Oats	34,072	33,705	28,256	27,231	29,192	29,745	32,720	34,518	36,539	37,625
Rye	357	320	431	452	326	258	218	441	1,399	830
Beans	11,785	11,122	9,852	8,636	10,196	10,047	8,863	7,269	7,373	7,216
Peas	4,605	5,545	5,909	5,813	5,257	5,148	4,969	5,698	7,073	6,100
Potatoes	1,960	2,125	2,126	2,299	2,042	2,159	2,242	2,653	2,361	2,603
Turnips and Swedes	34,594	32,154	31,587	30,589	30,891	30,023	31,306	32,143	30,779	29,689
Mangold	5,060	4,895	5,027	4,165	4,082	4,922	5,217	5,137	4,966	4,641
Cabbage, Kohl-Rabi, and Rape.	1,630	1,344	1,497	1,111	1,340	1,445	1,253	1,502	2,175	1,634
Vetches, Lucerne, &c.	11,176	10,932	11,008	8,097	8,238	8,103	7,281	6,319	5,813	5,703
Other green crops	...	...	...	...	...	972	891	982	1,307	1,393
Bare fallow	8,910	6,871	6,190	8,263	7,192	6,312	6,691	8,172	4,765	8,345
Clover, &c.—										
For hay	33,145	38,952	35,505	41,471	37,009	35,996	34,205	31,100	32,124	39,117
Not for hay	14,616	11,635	11,604	9,617	11,152	11,868	11,275	15,000	9,913	11,084
Permanent pasture—										
For hay	63,763	70,893	73,607	80,110	74,580	69,041	66,809	57,890	77,020	74,333
Not for hay	98,907	96,363	95,274	91,722	101,533	108,477	112,934	125,146	108,665	113,335
Horses—										
Solely for agriculture	13,594	13,535	13,218	13,449	13,493	13,574	13,672	13,188	13,104	12,874
Unbroken horses and mares solely for breeding	4,551	4,443	4,397	4,158	[1] 3,779 [2] 467	3,896 467	4,079 525	4,271 547	4,405 579	[3] 3,126 [4] 1,215 583
Cattle—										
Cows and Heifers, &c.	20,577	20,495	19,634	18,942	20,353	21,362	21,483	20,591	18,886	19,165
2 years and above	15,719	14,542	12,872	12,580	12,857	14,656	17,666	16,350	14,686	12,523
Under 2 years	25,398	22,709	20,836	20,120	23,233	25,739	25,568	[5] 12,886 [6] 11,279	11,629 9,718	10,211 11,535
Sheep—										
1 year and above	167,472	162,102	154,708	150,564	151,382	161,628	166,067	[7] 112,411 [8] 47,680	101,308 38,014	97,190 40,876
Under 1 year	127,559	119,714	118,838	108,755	115,212	119,869	121,817	112,100	106,607	103,676
Pigs	34,324	33,054	35,535	37,594	44,110	46,288	32,072	[9] 5,015 [10] 24,583	5,662 27,346	6,908 37,829

[1] Horses unbroken. [2] Unbroken mares. [3] 1 year and above. [4] Under 1 year. [5] Between 1 and 2. [6] Under 1.
[7] Breeding ewes. [8] Other sheep 1 year and above. [9] Breeding sows. [10] Other pigs.

	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
Total area	480,688	...	...	...	...	...	...	...	...	...
Total acreage under crops and grass.	412,293	412,011	411,962	412,146	411,682	411,917	411,899	411,650	411,425	411,528
Wheat	33,285	38,902	40,995	40,082	36,180	34,540	33,751	30,725	28,845	37,226
Barley	44,840	42,607	39,496	41,783	42,016	41,886	39,586	38,201	36,356	34,391
Oats	30,686	30,709	28,018	29,616	31,912	30,387	32,466	33,454	35,645	31,715
Rye	1,035	845	792	529	617	680	811	680	605	680
Beans	7,015	6,255	6,342	6,526	6,464	5,984	5,143	5,374	5,392	5,673
Peas	5,084	4,778	4,589	4,200	3,709	3,534	3,555	3,537	3,566	3,645
Potatoes	2,857	2,452	2,495	2,587	2,483	2,953	2,859	2,386	2,157	2,626
Turnips and Swedes	28,151	26,699	24,508	24,479	23,592	23,169	22,721	21,753	22,068	22,323
Mangold	4,579	4,929	5,087	5,516	6,183	5,448	6,037	5,542	5,303	5,455
Cabbage, &c.	2,023	1,711	1,495	2,099	2,379	1,985	2,302	1,765	1,641	1,590
Vetches, &c.	5,721	6,836	6,635	6,852	6,326	5,791	5,612	5,583	4,856	4,909
Other green crops	2,107	2,144	2,213	1,971	2,252	2,119	2,297	2,795	2,418	2,254
Bare fallow	6,907	5,477	5,404	3,887	3,522	4,912	4,419	6,320	8,191	6,887
Clover, &c.—										
For hay	35,030	35,880	42,345	36,941	37,103	40,696	41,902	42,605	40,210	36,674
Not for hay	11,744	13,972	12,282	14,478	13,008	11,488	10,770	10,161	10,247	10,284
Permanent pasture—										
For hay	72,575	72,784	75,950	70,513	73,300	72,687	75,987	79,405	80,913	75,715
Not for hay	118,366	114,803	113,081	119,835	120,416	123,405	121,452	121,128	122,781	129,232
Horses—										
Solely for agriculture	12,649	13,050	13,071	13,113	12,820	12,849	12,766	13,222	13,578	13,816
Unbroken horses	[1] 3,194	3,358	3,429	3,362	3,255	3,378	3,459	3,676	3,456	3,434
	[2] 1,355	1,374	1,260	1,262	1,201	1,253	1,267	1,277	1,301	1,294
Mares	631	...	...	...	...	...	...	...	...	...
Cattle—										
Cows and Heifers, &c.	19,371	19,681	20,243	21,398	20,653	19,865	19,420	19,840	21,393	22,096
2 years and above	12,019	11,831	12,919	12,353	13,726	13,903	13,256	13,509	14,159	14,370
Between 1 and 2	11,857	12,811	12,249	13,483	14,535	13,430	13,372	12,966	14,569	16,350
Under 1	11,956	11,538	12,424	13,461	12,937	12,249	12,245	12,535	13,205	14,883
Sheep—										
Breeding ewes	95,647	93,003	93,011	97,219	94,019	93,841	89,333	86,058	82,383	81,447
1 year and above	41,385	38,093	43,220	41,051	37,442	37,613	38,425	39,837	39,223	34,297
Under 1 year	107,546	101,397	99,596	106,161	98,864	100,196	99,859	94,442	89,129	90,371
Pigs—										
Breeding sows	6,569	5,317	5,611	5,759	4,931	4,706	5,108	5,943	5,809	4,946
Other pigs	37,056	26,736	27,778	30,836	26,101	23,912	24,005	31,225	32,520	26,103

[1] 1 year and above.

[2] Under 1 year.

AGRICULTURAL STATISTICS FOR OXFORDSHIRE (*continued*).

	1906	1907	1908	1909	1910	1911	1912	1913	1914
Total area	478,112	...	...	...	...	476,669	...	...	...
Total acreage under crops and grass.	411,982	411,965	411,874	411,504	412,000	411,956	411,536	411,141	...
Arable land . . .	...	204,502	203,350	201,652	201,235	201,895	202,154	200,399	...
Permanent grass . .	...	207,463	208,524	209,852	210,765	210,061	209,382	210,742	...
Wheat	36,662	32,968	33,703	38,638	38,282	41,243	41,752	39,221	...
Barley	34,334	34,941	34,643	34,966	36,770	34,030	35,024	36,887	...
Oats	32,938	34,559	34,485	32,210	31,606	31,342	32,822	29,509	...
Rye	650	550	522	525	493	461	551	622	...
Beans	6,662	7,295	6,778	7,613	6,676	7,617	6,446	6,717	...
Peas	3,123	3,419	3,145	3,376	3,000	3,079	3,616	2,918	...
Potatoes	2,605	2,397	2,295	2,401	2,223	2,397	2,963	2,789	...
Turnips and Swedes . .	22,555	21,995	21,847	22,040	21,890	21,967	20,878	19,986	...
Mangold	6,007	6,391	6,076	6,390	6,199	6,421	7,426	5,957	...
Cabbage	637	650	554	494	490	510	558	434	...
Kohl-Rabi	115	185	152	102	85	67	160	67	...
Rape	784	743	574	675	711	559	686	422	...
Vetches	5,206	6,062	5,163	5,242	4,033	4,240	4,851	3,811	...
Lucerne	1,705	1,705	1,845	1,826	1,609	1,454	1,544	1,668	...
Bare fallow	5,593	3,890	4,948	5,059	6,461	5,833	4,381	8,953	...
Clover, &c., under rotation	[1] 46,041 [2] 555	45,754	45,720	39,038	39,676	39,646	37,373	39,553	...
Horses used for agriculture	13,620	13,521	13,781	13,774	14,101	13,608	13,056	11,430	...
Stallions	...	...	...	...	...	92	91	95	...
Unbroken horses { 1 year & above	3,421	3,406	3,275	3,313	3,133	2,934	2,915	2,619	...
Unbroken horses { Under 1 year.	1,268	1,130	1,204	1,250	1,242	1,123	1,019	1,081	...
Other horses	...	...	...	...	...	1,968	2,195	4,036	...
Cows and Heifers, &c. .	22,689	[3] 15,839	15,705	16,387	16,233	16,390	16,425	15,059	...
		[4] 6,513	7,342	7,187	6,967	7,434	6,194	7,050	...
Other cattle { 2 years and above	15,520	14,922	15,256	14,742	15,566	15,711	16,319	15,002	...
Other cattle { 1 year & under 2.	17,186	15,234	14,168	15,976	17,028	17,175	17,193	15,389	...
Other cattle { Under 1 year .	14,575	13,049	13,865	15,837	15,297	14,629	13,140	13,872	...
Breeding ewes	83,757	81,940	85,506	92,360	90,554	85,546	79,208	72,292	...
Other sheep { 1 year and above	31,076	31,532	45,160	43,050	42,921	38,736	31,662	34,123	...
Other sheep { Under 1 year .	91,853	92,227	95,176	99,184	97,604	86,027	82,315	78,652	...
Sows kept for breeding .	4,732	5,341	5,346	4,573	4,690	5,306	4,685	3,882	...
Other pigs	23,430	27,106	30,541	26,118	25,194	28,048	26,419	20,830	...

[1] For hay.
[2] Other crops.
[3] In milk.
[4] In calf, but not in milk.

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